School Shop

vol. X no. 10

JUNE, 1951

Fill the Vacuum!
by Jess E. Rathbun

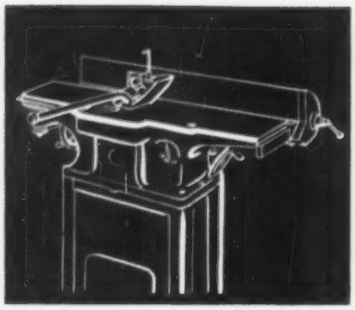
The Production Line in Industrial Arts
by Conrad Johnson

Add Lapidary to Your Program!
by Marvin J. Willis

The Silk-Screen Process
by R. R. Henderson

On the cover: Gem cutting and jewelry making are gaining increased interest as industrial-arts activities. This Hamilton High School, Los Angeles, Calif., student is making a ring. For a discussion of gem cutting see page 10.

THE MAGAZINE FOR TEACHERS OF INDUSTRIAL EDUCATION



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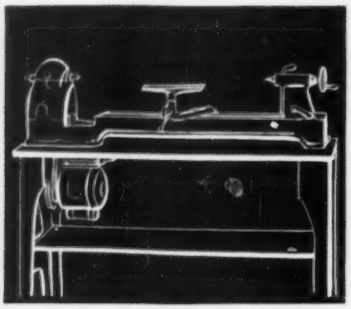

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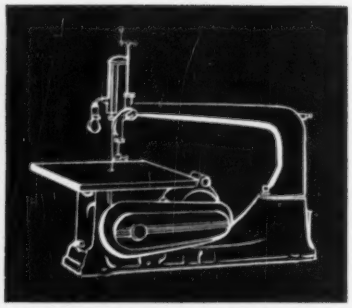

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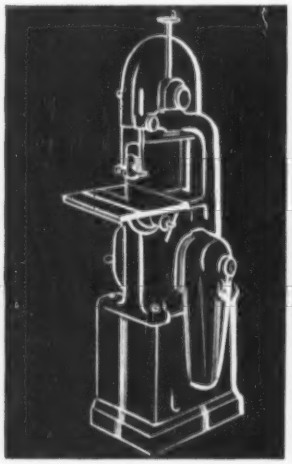

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In the Offing . . .

For you, our readers, we wish a pleasant and professionally enriching vacation. We hope that some of you will take the opportunity to write to us about that project, big or small, which your fellow instructors might look at and perhaps learn from. We will be busy here preparing articles and features for another year of publication. By the way, if you are moving on to a new position be sure to let us know so you can receive SCHOOL SHOP without interruption.

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School Shop

FOR INDUSTRIAL EDUCATION TEACHERS

CONTENTS **Vol. X, No. 10** **JUNE, 1951**

School Shop Talk—Editorial Comment 2

Originality in thinking is healthy, but many of our "modern" ideas are not new at all. A perusal of certain books written by pioneers in school shop education and the cultural value of creative work would be highly rewarding this summer.

Fill the Vacuum! Jess E. Rathbun 7

The editorial in the March issue cautioning against absorption of the shop by the art department evoked quite a response. Here is an article calling for a positive attack on the problem instead of intramural backbiting.

The Production Line in Industrial Arts. Conrad Johnson 8

Actual experience in industrial methods is provided too seldom in most school shops. Cooperative work in helping others was also combined in this project.

Jigsaw Jones. Aaron Adams 9

The same old dose!

Add Lapidary to Your Program! Marvin J. Willis 10

The ancient and intriguing art of gem-cutting can be brought well within the reach of the youngest general shop pupil. You think not? Then read this article.

The Silk-Screen Process in the School Shop. R. R. Henderson 12

One of the easiest units to add to the printing course, it also meets perfectly the common demands for posters, announcements, etc., as well as providing a new interest for pupils which may carry over into post-school years.

AIAA Convention News 13

Handy Grinder Attachment. Worsley Fardy 14

You can sharpen plane irons and chisels easily with this shop-made item.

In the Morning Mail 16

News 18

Happenings of interest to shop teachers and administrators.

School Shop Kinks 20

Short cuts to easier and more effective teaching.

Diamond Dust. Thomas Diamond 22

The critic takes a back seat to re-focus and gain a new perspective.

Strictly Personal 24

About your fellow teachers.

Instructional Resources: Books, Pamphlets, Visual Aids 26

Listings of the latest in materials which will help you in your shop teaching. Designed to keep you up to date on texts and related materials.

News from Industry 28

News items about new products and teaching aids designed by industry to be of service to shop teachers. Send in a coupon today for free and low-cost materials.

Index to Volume X 30

From Washington. School Shop Washington Bureau 32

News from the Nation's Capital of interest to shop teachers.

Index to Advertisers 32

CCA

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School Shop TALK

COMMENTS ON ISSUES FACING INDUSTRIAL EDUCATION

The Heritage of the Past

Evidence could be presented which appears to indicate that youth is constantly uncovering ideas which, to them, are original. This is good since it is a healthy sign when our potential leaders do some original thinking. However, it might simplify the task of these young people if they made an effort to familiarize themselves with the pronouncements of some of those who have traveled the road, and have passed on to their reward.

There is a tendency on the part of some educators to confine their reading to the current literature in their fields. Without condemning this practice, it is suggested that it is a profitable expenditure of time for a professional person to examine the back trail since, here and there, those who have gone before have recorded ideas and philosophies which apply just as effectively today as they did when they were written.

If we go back a mere 50 years, we find Dr. Kerschensteiner, Superintendent of Schools in Munich, Germany, putting into operation many of the ideas which, today, are considered by some to be relatively new.

In one of his books he quotes from Goethe, who expressed the belief that, "Handwork, such as can only be learned in its own narrow field must precede all life, all action, all art. To know one thing well, and to practice it, gives more culture than a half-knowledge of a hundred things." This appears to have a close resemblance to the idea, which is gradually gaining acceptance today, that manipulative work, as taught in school, has considerable cultural value.

A statement made by Kerschensteiner in this country in 1911 supports another idea which we find being discussed at some length by present-day educators. The statement was to the effect that ". . . . education for a calling offers us the very best foundation for the general education of a man . . . . We are also far too much inclined to assume that early education for a calling must necessarily be a narrow and one-sided education."

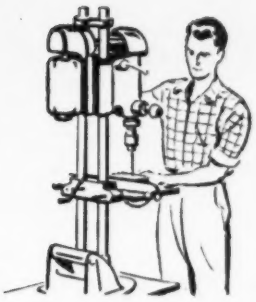
In an article on continuation schools Kerschensteiner says, "The ultimate goal of all public schools, supported by public funds, is the education of the pupil so that he may become a useful citizen . . . . . The first task of the school is, therefore, to further the pupil's capacity for work, and therewith his joy in work."

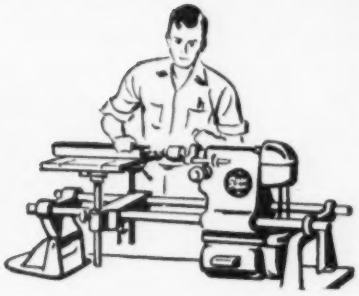
These quotations serve only to illustrate the thought that many of the problems of today in industrial-arts education were recognized by the men who helped gain acceptance for shop activities in our public schools. Other men, such as Bennett, Griffith, Dewey, Bonser, and, more recently, Prosser, Allen, and Selvidge, all made pronouncements which dealt with the school shop problems of today. Cooperative education, the general shop, and the laboratory type of school shop were all conceived by our predecessors, notwithstanding the current belief on the part of some that they are new and original ideas.

When a scientist begins to explore a field of science, he feels it to be to his advantage to find out what has been done in this field by others. In order to inform himself on this matter, he searches diligently through the literature of the past in order that he may benefit from the experience of others.

Similarly the lawyer and the doctor rely on their books for aid in their work. If they find that someone has been working on the idea in which they are interested, they accept his findings, or they proceed to test their validity. When this is done they are in a position to determine the point at which they should start their investigation or experimentation, and can proceed with assurance that they are not trying to "rediscover America." Should they fail to find any evidence of work having been done on the problem, they can feel assured that they are entering on a piece of original research.

And so it would seem to be a profitable enterprise for young teachers in the present generation to explore the writings of the past. It will provide them with the best thinking of the pioneers in their field. And it will provide a substantial basis from which they can proceed to carry out their own ideas—ideas which they believe will develop a still better program of industrial arts or industrial education.—*T.D.*





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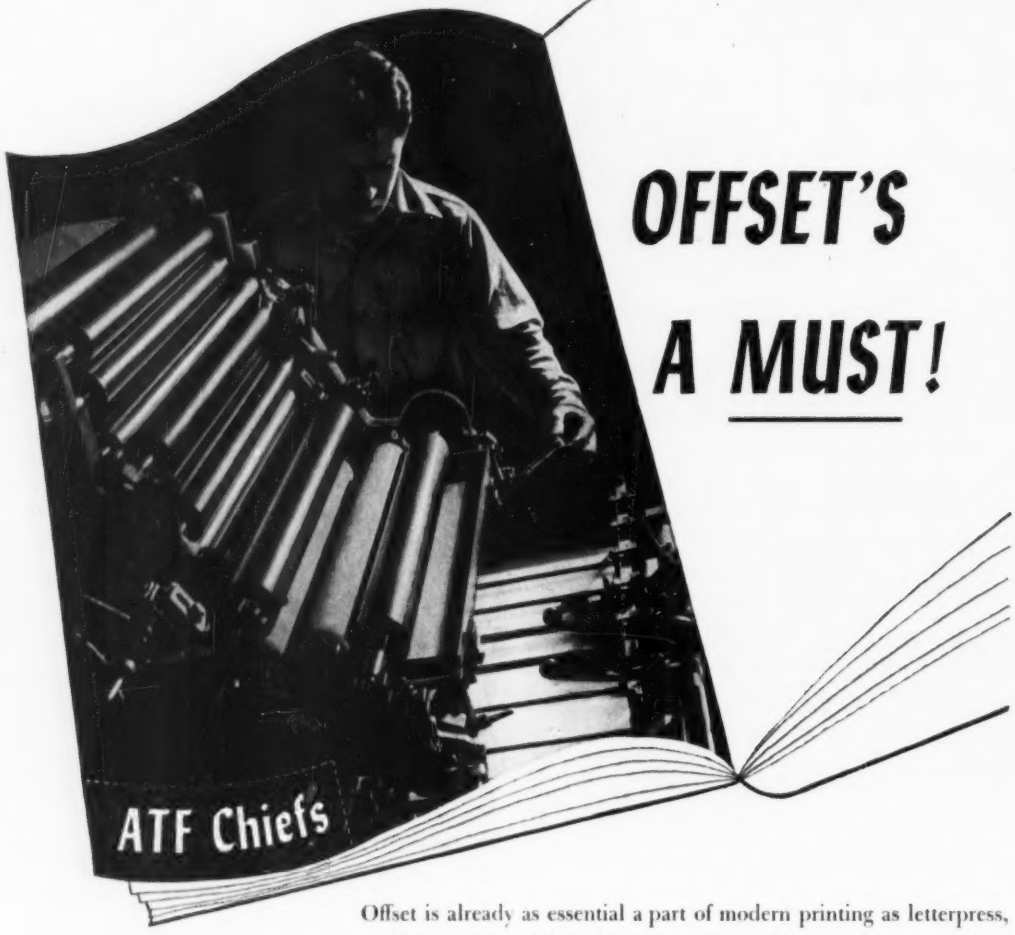
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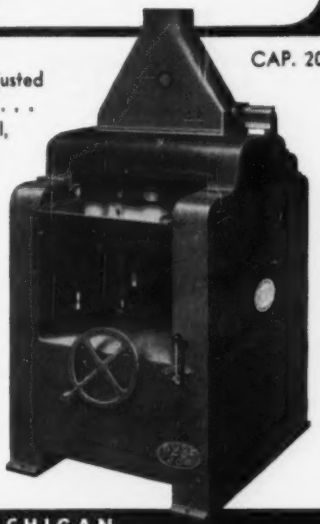

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"EVERYTHING IN INDUSTRIAL ART SUPPLIES"

Fill the Vacuum!

By Jess E. Rathbun

This is a call to arms to strengthen the industrial-arts program, as the author believes a good offense is the best defense. He is Coordinator of Industrial Arts, San Francisco, Calif., Unified School District.

THE stimulating editorial, "Correlation—but no Absorption!" in the March issue of SCHOOL SHOP presents a provocative point of view and a challenge to every industrial-arts teacher. The editorial states: ". . . we are a little concerned about the way the art people want to absorb industrial arts. The grab is on! There are enough instances now on the books to make it a serious matter."*

The first reaction is likely to be a defensive one with major emphasis on projecting blame for these identifiable trends in this area. A more remunerative and constructive point of view is to ask the searching question, "Why has this been possible?" We should seek the answer in our own backyards rather than expect to find it in the suspected idiosyncrasies of our co-workers representing interests in another department. What are some of the deficiencies in the industrial-arts program?

The modern concept of education is based on meeting the needs of the students in all areas of development. If the industrial-arts program leaves a vacuum in a major area of student development, some other activity soon will fill that same vacuum. No activity can displace an industrial-arts program that is successful in meeting the needs of the students it serves. With this point of view, we should be disturbed by our failure to progress rather than by what progress others are making. After all, our primary concern is the needs and experiences of the students.

Long-Standing Evils

There are numerous reasons why the industrial-arts program has allowed an educational vacuum to develop in areas of direct concern to it, and why "absorption" has become a threat in some instances and a reality in others. These reasons have not been "mushroom" developments; rather, they are results of long-standing evils.

The trade-training point of view has been a millstone around the neck of the industrial-arts program. The trade-training point of view insofar as the industrial arts are concerned is dying a slow but painful death. The tragedy is that it is taking much of the industrial-arts program with it. Many teachers more highly skilled in trade techniques than in knowledge of the developmental needs of growing girls and boys refuse to see the handwriting on the wall and adapt their programs to meet needs.

The depression made a tremendous impact on the industrial-arts program in many places. The inflexibility of the program made it impossible for necessary modifications to be made. The program cost fully twice as much as most any other in the school, and the rigidity of purpose and point of view left no alternative when the economy axe fell. The war brought about a similar situation though the cause was different. Industrial-arts shops in many places could not operate on the basis of restricted materials; however, when the industrial-arts teacher moved out because he was unable to make emergency adaptations, another craft could move in with spectacular success. How many industrial-arts programs closed in these times of emergency only to open again as art shops?

Failures

The industrial-arts program has failed in many situations to meet some of its fundamental purposes. For example, providing a wide variety of exploratory experiences and orienting students to a culture dependent on industrial development are examples of two major purposes. For a realistic test of these values, select at random a few industrial-arts teaching practices and examine them for the breadth and depth of emphasis in these areas. How does emphasis here compare to that on trade skills and techniques? In all too many places there is a disproportionate amount of emphasis on trade and apprenticeship purposes and techniques. The unit shop has failed to meet these basic objectives, and the traditional general shop has been weighed and found wanting.

Further proof of failure to meet student needs is evidenced by the students themselves in their selection of courses on a purely elective basis. When industrial-arts subjects are required, as they frequently are in certain grades, the students too often are there in spite of the program rather than because of it. It is a different story when all the practical arts are offered on an elective basis. Students are keen to sense and quick to react to inadequacies in a school program.

Administrators Question IA

A most important factor in the total program is the role of the administrator. Programs are established, expanded, absorbed, or deleted on the administrative level, and the local administration is the first to identify deficiencies in the various subject offerings. There can be no "grab" without administrative blessings. The administrator's primary interest is the children and their needs, and departmental identity is of somewhat less importance if of importance at all. Since the industrial-arts program is by far the most expensive to maintain it is only reasonable for the administrator to expect it to be superior in meeting certain needs of girls and boys.

What To Do?

What is the answer? The industrial-arts program should fill the vacuum which it has left for others to fill. To identify this area it will be necessary to study local needs and determine what should be done that is not being done. In some situations it will take a change in emphasis and teaching procedure. In others an expansion of the program will be necessary to meet student needs in a broader area than at present. We should beware of projecting blame to the administrators, counselors, parents, or to aggressive personnel in other departments. Let us search for deficiencies in our own program—other people are finding them.

This situation is reminiscent of the story of the golfer and the ant. The story goes that an ardent golfer found his ball trapped in the depressive entrance to a large ant hill. A vicious stroke completely missed the ball but demolished the ant hill and killed half the ants. A second attempt likewise missed the ball and killed all but two of the remaining ants. One of the ants readily sized up the situation and said

(*Continued on page* 18)

*For the full text see the March issue of SCHOOL SHOP, page 2.

The Production Line in Industrial Arts

By Conrad Johnson

In this article Conrad Johnson, who teaches in the State Teachers College, Trenton, New Jersey, presents a plan which calls for cooperative effort, and which affords an opportunity for community service which is found too infrequently in industrial-arts shops.

A REQUEST for help with a Junior Red Cross project suggested an interesting activity which appeared to afford numerous educational experiences for all who participated in it. In response to the request, a chapter of this organization, located in the Fisk School, decided to contribute some type of recreational equipment for the hospitalized soldiers at Fort Dix, New Jersey. At the time this decision was made, five industrial-arts students at Trenton State Teachers College were conducting some "Shop Club" activities in the Fisk School. This work was being done with a minimum number of tools and materials, with lunch tables for benches, and with other improvised equipment.

These Shop Clubs met for a 75-minute period once each week, and the work included the making of a variety of projects which were of interest to the pupils. When the plan for helping the soldiers was presented, it suggested the possibility of making it a production job in which all members of the club could participate. This idea was received enthusiastically by both students and teachers, and it was agreed that a supply of checker sets might be an acceptable contribution. With this thought in mind, plans were made, designs were developed, and the necessary jigs and other equipment were prepared.

Some of the equipment was borrowed from the college shops and from individuals, and all the necessary preparations were made by the student teachers. When these were completed, the plan was explained to the various club groups and a demonstration of the procedure was put on by the student instructors.

One of the limitations of this arrangement lay in the fact that the pupils were not involved in the setting up of the equipment, or the planning of the job. Under more favorable conditions, it would have been desirable to have them take part in the planning and arranging. However, in this case the work to be done, the facilities available, the distance between the college and school, and the time schedules were such that it seemed imperative that the preparations should be made by the instructors.

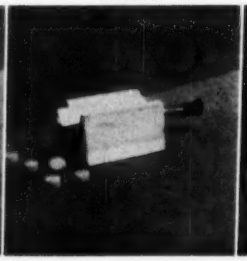
The primary purpose of the plan was to produce a quantity of checker sets, but the educational significance of the venture was discussed at length. Too often do industrial-arts teachers give but lip service to the industrial-arts objective of providing the pupils with some experiences helpful in giving them an appreciation of industry and industrial methods. Humble as the project was, it was definitely planned to make some contribution toward this objective. As a matter of fact it was the feeling of the group that the experience should contribute to several purposes, namely:

1. To produce 50 checker sets.
2. To provide opportunities for boys to participate in a "production-line" activity.
3. To illustrate the usefulness of jigs toward the efficient, safe accomplishment of a variety of operations.
4. To illustrate the use of a variety of equipment.

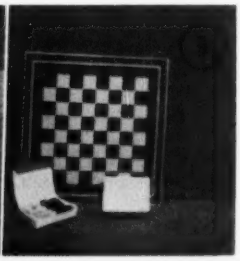
The above pictures show the groups at work on the production line. A brief description of each operation appears in the text.

Jig for cutting checkers to size

Jig for sanding second face of checkers.



The finished product.



5. To provide the satisfaction which comes from doing something for others.

The Equipment and Procedure

Photograph #7 shows a simple miter box which was used in cutting the checkers to length. A stop was fastened into the box which regulated the length of the checkers which were cut 3/8" long from pieces of 3/4" dowel. Before cutting the pieces to size, however, the ends of the dowel were sanded smooth on a disc sander with the aid of a V-block similar to the miter box mentioned above. This V-block may be seen in photograph #1 at the end of the table, and is also visible in photograph #2. The cutting operation in photograph #2 is somewhat obscured by the position of the boy shown cutting a sandpaper disc.

As a safety precaution, each 3/8" length of dowel was placed in a holder in order to sand the second side. The holder, which is shown in photograph #8, consisted of a 1½"x 1½"x4" block. The block has a 5/16" hole bored all the way through its length and a 3/4" hole, 1/4" deep, in one end. This provided a safe method of applying the checker to the sanding disc. A dowel inserted in the 5/16" hole served as an ejector. A compression spring was placed on the end of the dowel and the end bound with tape.

In photograph #1 the sanded checkers are shown being put into a "tumbling" arrangement in order to smooth the edges. The tumbler consisted of an octagonal box containing some sandpaper sheets, and some small pieces of hardwood. A 14" wooden pulley was fastened to the tumbler which was mounted on a simple wooden frame. The tumbler was rotated slowly by passing a string around the wooden pulley and the shaft of the motor which drove the sanding disc.

From the tumbler the checkers went to the finishing department, shown in photograph #3. At this point half of the finished checkers were placed in a small wire basket and "dunked" in a can of penetrating walnut stain, and spread out to dry.

Photographs #4 and #5 show the box-making division. The boxes were made of index bristol stock. The patterns were traced from sheetmetal templates, cut out with scissors, folded, and stapled. By using a homemade hectograph, each box was labeled, "Compliments of Fisk School, Ewing Township, New Jersey."

In the background of photograph #5 and in photograph #6 is shown the checkerboard printing process. The boards were cut 11"x11", so as to cut economically from 4'x8'x1/4" sheets of masonite. The cutting was done in the college shop by the student instructors. The pupils sanded the edges of the boards before placing them in the silk-screen printing frame.

The silk-screen process proved to be an efficient and interesting procedure to pupils and adults alike. Although the process was new to the student who directed this activity, he felt that the experience was well worth the time and effort he expended on the job. (Grateful acknowledgment is hereby made to Mr. Vincent Dresser, Graphic Arts Instructor, State Teachers College, for his interest and for his contribution to this phase of the project.)

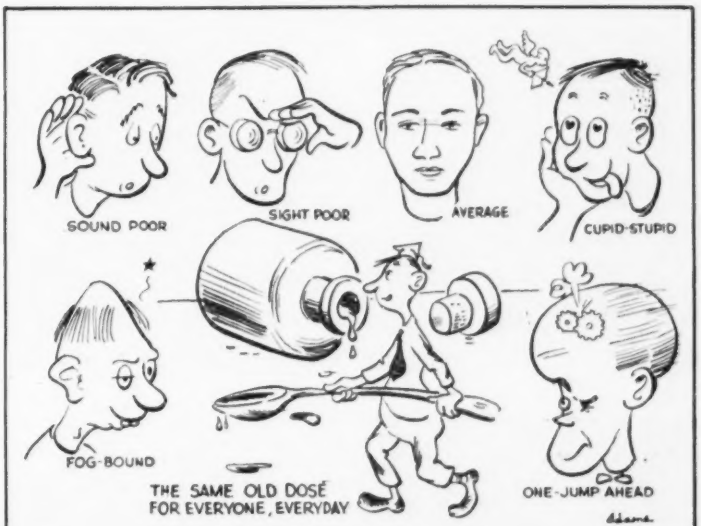
In all, some 65 sets of checkers were completed, to the satisfaction, and, we believe, to the educational advantage of all concerned. Fifty sets were turned over to the Junior Red Cross Club; the remainder went to the pupils who worked on the project.

As a climax to this experiment, one of the student teachers accompanied a delegation of Fisk School children on a trip to Fort Dix, where the sets were distributed to the hospitalized soldiers. On this occasion the visitors were permitted to mingle with the men, to play checkers, and to explain to the men the procedure followed in making the sets.

A great deal of time and effort was devoted to the preparation and the carrying out of this project. However, it is believed that the time and energy was well spent in the education of both school pupils and future industrial-arts teachers. This is especially true since we feel that the project was motivated by a spirit of service to such a worthy cause as is represented by the efforts of the Red Cross.

The Same Old Dose for Everybody

by Aaron Adams
Marion, Indiana, High School



ANY teacher anywhere will find some familiar faces among the gallery here pictured. To do his job he must teach them all. How successful he will be depends on the tools he uses and the versatility of his approach.

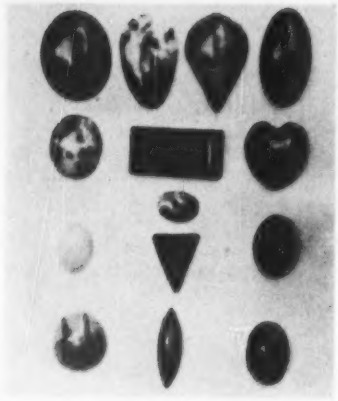
For any one lesson he may need a presentation that does not cause the "sound-poor" boy to depend entirely on hearing nor the "sight-poor" one on seeing.

The problem is even greater with the differences between the "fog-bound" and the "one-jump-ahead" individuals. All are human personalities worthy of thought and attention. The good teacher varies the dosage quantitatively and qualitatively.

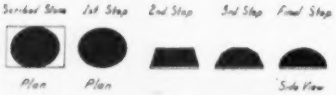
Add Lapidary to Your

By Marvin J. Willis

Does gem-cutting have a place in industrial arts? The author says yes and his experience presents a strong case for acquainting pupils with this fascinating field. Marvin J. Willis is instructor in industrial arts in the Ada Merritt Junior High School, Miami, Florida.



These attractive gems were cut by pupils in the Merritt Junior High School, Miami, Fla.



Steps in shaping a cabochon.

THE appreciation of gem stones is as old as civilization, but at first thought cutting one's own seems entirely beyond the ability of an amateur, especially an immature student. However, gem stones do not necessarily mean diamonds or emeralds, but eye-appealing minerals and rocks that can be found almost anywhere. I have found, in more than a year's trial, that lapidary—the art of gem cutting—is well within the ability of the junior- and senior-high-school pupil. What is more, it is the one industrial-arts unit which may be introduced with a minimum of equipment, making it practical for the school operating on a limited budget. Much of the needed machinery can be built in the machine shop, though it is essential that it be well constructed for good results.

The thrill of seeing a rock's freshly-sawed surface with its myriad lines or crystals that show so many different colors and patterns not visible on the surface is unforgettable, and is repeated with each new cut. Even more exciting is the beauty that the most drab specimen acquires when a surface is ground smooth and polished. Add internal reflection or light passing through the gem, and you have something of rare loveliness. This comes with working oval surfaces into cabochons—oval gems (see photo). The ultimate is mounting the smaller pieces either in ready-made mounts or in ones fashioned in the shop. The progressive industrial-arts instructor cannot overlook this opportunity to enrich his program.

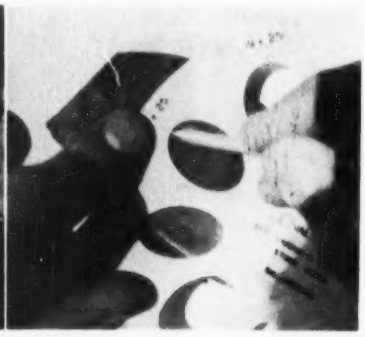
There are several types of lapidary work: cutting and polishing cabochons, flats, faceted stones, spheres, beads, etc. For ordinary cabochon work one may use either the horizontal lap and abrasives, or the vertical wet grinding wheels. For shaping and polishing flats, the most ideal setup is the horizontal lap. If possible, several large laps may be set up to accommodate groups of pupils.

Our laboratory is operated on the composite general shop plan, rotating every six weeks. In this way, it is easy to operate the lapidary area with a minimum of equipment, since only a few pupils are at this work during each six-week period.

Two types of saws are used in lapidary work. They are the slab saw used in making the original cut, and the much lighter and smaller trim saw used to saw the thin slabs into workable sizes. Several kinds of both are on the market.

Shaping and polishing "flats" is done on large "laps." The author recommends setting up several laps to take care of a group of pupils.

Rough stone is first sliced with big slab saw to desired thickness, usually about ¼".



Desired outline of the cabochon is traced on the slab with aluminum scribe and templet.

Program!

Most commonly used is the diamond saw. Another is the mud saw. Both are available in various diameters and gages. A silicon carbide resinoid and rubber cut-off wheel has been found very effective in cutting petrographic specimens and minerals with a hardness of 7 or less on Moh's scale of hardness. All these saws use some type of lubricant. Lapidary companies can give detailed information.

Once the rough stone has been cut into pieces of, say, ¼" thickness, scribe the desired shape for the finished article on the slab by use of a templet and scribe. Next cut the slab almost to the outline on the trim saw. The stone is now ready to be dopped.

The materials needed for dopping the stone—dopping wax, stick shellac, and a short dowel—all must be warm and clean. A regular electric hotplate is ideal for this. The wax should be melted in a shallow container and the dowel dipped to form a mass of wax on the end. Next, spread a thin coat of shellac over the warm stone inside the scribed outline. Then heat the wax on the end of the dowel over the flame of an alcohol burner, and when soft, place it on the warm stone. Take care not to allow the wax to run outside the scribed line. By wetting the fingers, the student may easily build the mass of wax around the dowel and stone. Allow the prepared material to cool before the shaping is begun on the 100-grit wet wheel.

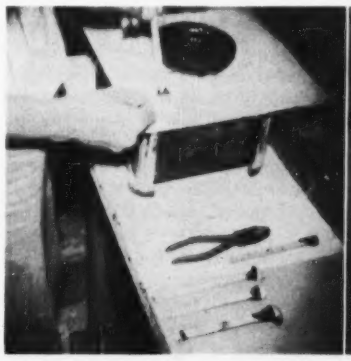
The dopped stone is first ground to the scribed line; then a bevel is begun from the table to within 1/32" of the base. The remaining 1/32" will be necessary to fit into the mounting of the piece of jewelry, since the bezel of the mounting will be pushed over to retain the stone. The stone is finally ground to the desired shape. The remaining pits are removed on the 220-grit wheel before smoothing the stone on the sander.

Several types of sanders are commonly used. The belt sander is ideal for flat work, whereas the concave and convex sanding discs are best for cabochon work. Some belt sanders are operated wet and they are very effective. When the dry-type sander is used, caution must be exercised not to allow the stone to become too hot, as it may then crack or become loose and drop off the dowel.

Very satisfactory sanders may be made in the shop on the wood lathe simply by turning concave and convex discs. Stretch abrasive cloth (220 grit for the average job) over the discs and clamp or tack to the periphery. Clamping with spring or wire is better as the cloth may then be changed more easily. The metal ring is slightly larger in diameter than the disc, and the spring is stretched onto the ring. The edges of the new cloth should be softened by applying a little water, then place the abrasive cloth over the ring (cloth side up), push the disc down inside the ring until the cloth folds up against the periphery, snap the spring in place and remove the metal ring. A groove cut in the periphery of the disc when it is turned provides a channel for the spring or wire clamp. These sanders

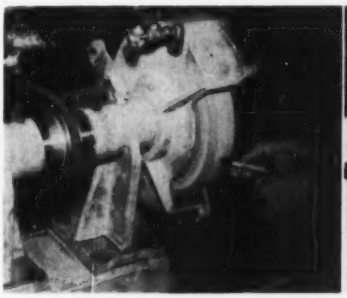
(*Continued on page* 24)

Next the stone slab is cut almost to the outline of the gem with the small trim saw.

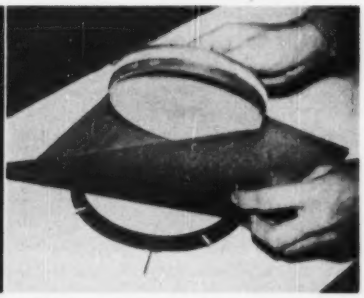


The stone is "dopped" on a dowel with wax so it can be held for grinding and polishing.

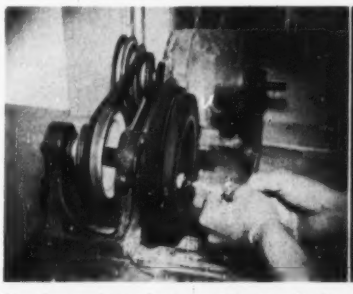
Wet fingers help in building up the mass of wax securely around the dowel and stone.



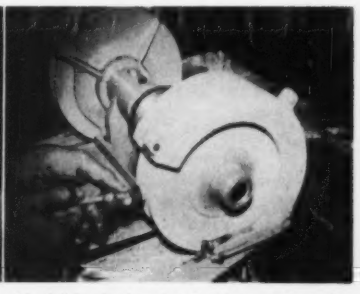
Grinding the trimmed stone to the desired shape and size is the next step.



Making a sander by turning concave and convex discs on the wood lathe is recommended.



The shop-made sander is used to smooth the ground stone before polishing.



Hard felt wheels painted with special powders in a water suspension give a final polish.

The Silk-Screen Process in the School Shop

By R. R. Henderson

The process described in this article is one which lends itself well to use in school print shops. It provides a motivating agency, and it introduces to the pupils a method of printing which is in common use in commercial practice. It can be applied to the various notices and announcements commonly used in schools, and it broadens the experience of the pupils in the field of printing. R. R. Henderson teaches in Madison, Maine.

IN EVERY community there is a field for silk-screen printing. Unless a large number of copies is required, type printing is expensive. Hand-painted posters are not practical if two or more copies are desired.

Most items, like school posters, window cards, and church announcements are usually wanted in lots of 10 to 100. For these the silk-screen process is ideal and most economical.

The silk-screen process requires very little equipment. Most of it can be homemade, and is especially adapted to small runs where fairly large letters are wanted and there is little fine print.

A stencil is formed on a piece of fine silk, previously stretched over a frame. This stencil is formed by filling in the meshes of the fabric to prevent ink penetrating where no printing is desired. The frame is then placed over the object to be printed and paint, or a special ink, pressed through the stencil with a squeegee.

By using varnish or some adhesive instead of paint and dusting the wet design with bronze, gilt letters as well as numerous appliqué effects can be obtained.

Procedure

First construct a plain wooden frame as in the pictures. A good size is about 17″ x 24″, inside measurement. This makes it possible to print the ordinary one-half sheet window card, but a smaller or larger frame can be made.

Cover the under side of this frame with a piece of screen silk, stretching it tightly and pulling it over the edges and tacking it. The silk is similar to bolting silk and comes in various meshes per inch. What is known as No. 10, with slightly over 100 meshes per inch, will be suitable for average use. The high cost of silk can be avoided by using an ordinary fine organdy cloth if desired, but it is likely to stretch out of shape when a large number of copies have to be printed, and it has the added disadvantage that it will not last as long as silk.

The frame should then be hinged to a smooth board, as shown in illustration 3. If pin hinges are used, this will make it easier to remove the frame for cleaning. Using bolts and wing-nuts instead of screws in the hinges is another way to simplify taking it apart.

Stencils may now be formed on the screen in several different ways. One of the simplest methods for ordinary poster work is the lithographic tusche method. Liquid tusche, which is a fatty ink, can be purchased from any lithographic supply or art store. If desired this material can be made in the school by mixing the following ingredients: beeswax—2 oz.; tallow—2 oz.; shellac—3 oz.; lampblack—1½ oz.; and hard tallow soap—6 oz.

Melt the shellac, then stir in the wax and the tallow. When this is thoroughly dissolved, stir in the soap and the lampblack. Cool and thin down with water to the right consistency for drawing or painting. Paint on the screen with a brush or pen the desired design or lettering with tusche and let it dry.

Now flow over the screen a layer of glue, diluted with water, just thin enough so that, when it is dry, it will fill all the pores in the silk without leaving any pinholes. Let the glue coating dry.

With a piece of soft cotton, wet with kerosene or paint thinner, dissolve and wash away the tusche lettering or design. This will leave open the pores in the silk under the design while all other pores will be stopped out by the glue film.

Printing

When the stencil is dry, place a piece of paper or cardboard in the proper position on the flat board and lower the stencil frame over it. Pour on a small quantity of paint or special silk-screen ink at one end of the stencil and with the aid of a rubber squeegee spread it across the silk to the other end. A film of paint will penetrate the design in the silk and print on the cardboard. The screen may then be lifted and the process repeated for further copies.

When the desired number of copies have been printed, the excess ink is removed from the stencil and it is washed with gasoline or paint thinner. If the same design or lettering is not to be used again, the glue stencil may be removed from the silk by washing with hot water. Dry the silk and it is ready for drawing a new design.

Photo Stencils

To produce small letters, pictures, or photographs a photo transfer method may be employed. This method is based on the fact that glue, to which a small amount of ammonium dichromate has been added, becomes insoluble in water after exposure to light. In order to use this method, it is first necessary to obtain a transparent photographic positive of the object you wish to reproduce. If it is fine type matter, or a line drawing, any photographer will take a picture of it and furnish you with a transparent positive of any size desired. If, however, it is a picture or photograph with continuous tones, it will be necessary to have the positive made by a photoengraver who will provide you with what is known as a halftone positive, made up of microscopic dots. A coarse halftone of not finer than 65-screen is desired.

Coat the screen with a dilute fish glue solution and allow it to dry. For the finest work, the glue should be diluted enough to leave a very thin film, but it should be thick enough so as not to leave bare spots or pin holes.

In the reproduction of photographs, a finer silk is preferable for the silk screen. One with 154 meshes to the inch, known as No. 16, would be suitable.

After the glue film is dry, brush it over with a solution of ammonium dichromate. This should be done in the dark or a very subdued light, or by a red darkroom light. Let it dry in the dark.

Now lay the sensitized silk screen, film side up, on a smooth surface. Place on top of it the transparent photographic positive, and over all place a piece of heavy glass so that the whole assembly will be pressed in close contact. Sus-

pend above it a No. 2 photoflood lamp, about 16" away from the glass, and turn the light on for about three minutes. The exact time of exposure will depend on the density of the photograph and the intensity of the light. A halftone positive will require less exposure than bold line work.

After exposure to the light, bathe the screen, glue side down, in a large pan of hot water. Soon you will see the glue begin to dissolve and discolor the water. Turn the screen over and continue to bathe until the glue has all dissolved away from the parts not affected by the light. The design should then be plainly visible. Run cold water into the dish. This will chill the remaining glue and fix it on the silk. Remove the silk screen from the water and allow to dry. This photo stencil may be printed in the same manner as the hand stencil first mentioned.

Photo-Film Process

One disadvantage of using the dichromate film on the silk screen is that it is almost impossible to remove the light-exposed glue from the silk so that it can be used again. Repeated washing and scrubbing with a brush may do it, but this soon wears out the silk.

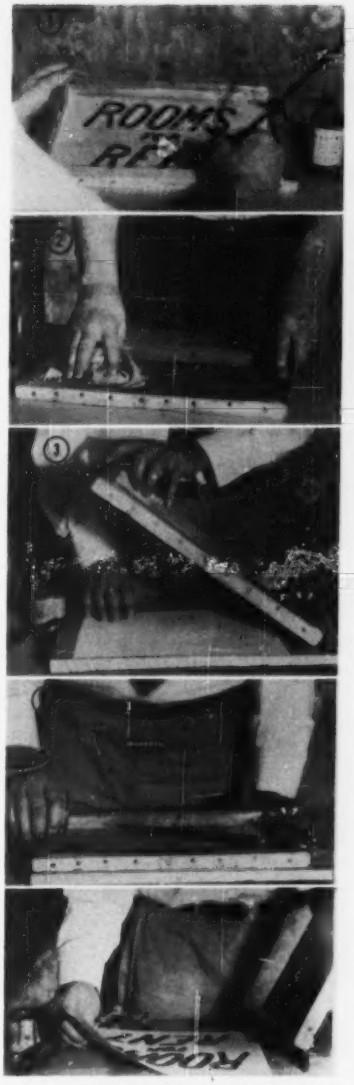
There is now on the market a product known as photo-film which consists of a film of glue on a paper backing. A sheet of this film can be sensitized with ammonium dichromate and then printed and developed in water the same as the silk mentioned above. Then, while it is still wet, it is laid on a flat surface and the clean silk screen laid on top of it, and the two pressed into contact. When it is dry the paper backing sheet is removed and the glue film sticks to the silk, and can be printed in the usual manner. This separate photo-film can be washed off and the silk used again.

Cut Stencils

This method is adapted for large letters and designs where no small or intricate drawings are necessary.

Take a sheet of heavy waxed paper and a sheet of thin cellophane and iron them together with a warm iron. When cool, they will stick together loosely. Lay this sheet on a firm flat surface, cellophane side up, and brush over it a thin solution of nail polish, or any other nitrocellulose lacquer. The thick nail polish or lacquer can be thinned down with polish remover or lacquer thinner. When this is dry, the design or the lettering can be cut through the cellophane with a sharp knife. Cut just through the cellophane, and not through the waxed paper. The small scraps of cellophane cut away in the places you wish to print can then be picked off the wax backing and discarded.

When the lettering is complete, place it on a table and put the silk screen over it. With a piece of cotton or soft cloth, dab a little of the polish remover or lacquer thinner on the opposite side of the silk so it will penetrate slightly, through the silk, to the cellophane. This will dissolve the cellulose coating and will cause it to stick to the silk. When the stencil is well fastened to the silk and the thinner has evaporated, the wax backing may be peeled off. When this has been done you have a complete stencil of your copy, with clear silk where the printing is to come, and cellophane film in the part blocked out. Use this in the same manner as any other stencil. When the job is finished this film may be loosened from the silk with lacquer thinner and used again.



1. After making the frame and stretching the silk over it, letter the poster or draw the picture with tusche.

2. After the design has dried, brush the stencil with a thin glue solution and let this dry. Now wash the entire stencil with a cloth dipped in gasoline. This will remove the tusche and leave a perforated stencil where the design was drawn.

3. Attach the frame to the back board by the hinges, and place a sheet of paper or cardboard underneath it.

4. Pour on a little thick paint or special stencil ink at one end of the stencil. Spread this ink across the stencil with the aid of a rubber squeegee.

5. On lifting the stencil a copy of the design will be found on the paper underneath.

American Industrial Arts Association Convenes in New York City

HOLDING its 13th and largest annual convention May 2 to 5 at the Hotel New Yorker in New York City, the American Industrial Arts Association took action on a number of fronts calculated to improve the industrial-arts profession throughout the country.

Well over 500 persons registered for the sessions which covered such varied topics as the proper way to secure good discipline in the shop to the achievements of modern American industry from an economic viewpoint.

The group went on record as favoring the granting of priorities and financial support for supplies, equipment, and new buildings for industrial-arts training. It also advocated strong support for Point Four and other international programs for the improvement of education, particularly as it relates to industrial arts. A committee was appointed to work with the State Department and other government agencies in this area.

Support was also given to the Life Adjustment Education program and the membership was urged to greater activity in the association with the ultimate view of obtaining a full-time executive secretary and permanent offices.

An organization meeting was held for the new American Council of Industrial Arts Supervisors which is a constituent group within the American Industrial Arts Association. Approximately 50 supervisors at the city and state levels met at the organization meeting on May 2 at which the constitution and by-laws of the council were adopted.

The council is designed to be of mutual assistance on professional problems to supervisors and has appointed a service committee to work on various problems. It will also

(*Continued on page* 18)

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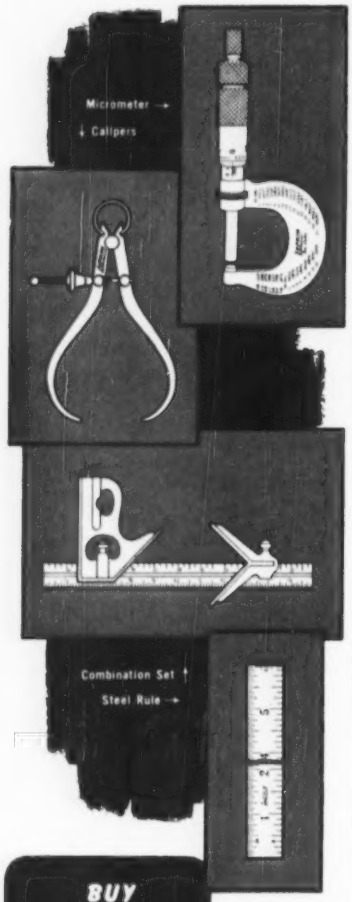

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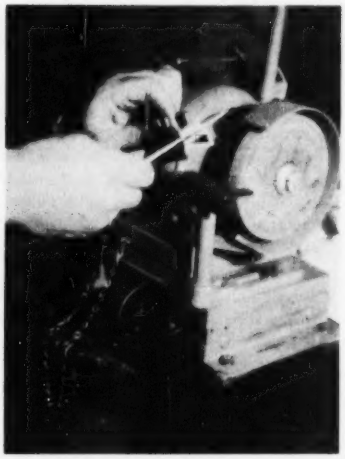
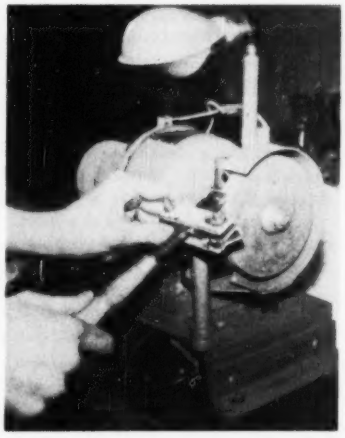
Handy Grinder Attachment

By Worsley Fardy

Here is a simply-made, yet handy gadget to have in the general shop. Its construction could be a good project for one or two students. Worsley Fardy teaches composite general shop at the Maynard, Mass., High School.



Attachment held above tool rest.



Grinding a chisel with attachment in place.

DOES your present bench grinder provide for grinding plane irons and chisels to the proper angle easily, or do you and your students have to gage this sharpening operation by eye alone?

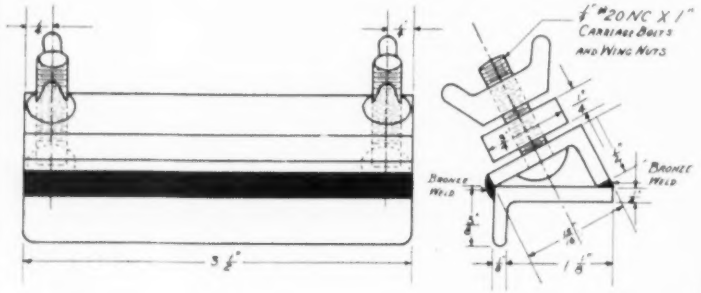
The sketch and photographs show a special attachment which can be easily made by pupils in the shop. No great alteration is necessary to the machine. The present type of rest can still be used for other purposes. The attachment has been used successfully for the past six years in my composite general shop.

It is built of two pieces of $\frac{1}{8}$" mild angle iron cut to the sizes shown. Two $\frac{1}{4}$" holes are drilled through the upper piece $\frac{1}{4}$" from each end, and filed square to fit tightly the square shank of $\frac{1}{4}$" x 1" carriage bolts. The clamp bar is made from $\frac{1}{4}$" x $\frac{3}{4}$" mild steel with two 17/64" holes drilled $\frac{1}{4}$" from each end to provide a loose fit over the bolts. The two pieces of angle iron are bronze-welded together with the bolts in place.

Some fitting may be necessary on the present horizontal tool rest of your grinder, since the front must be true and parallel to the wheel face, as it is the sole guide to the attachment.

A tool clamped in this attachment with about $1\frac{1}{4}$" extending toward the wheel will be ground to an angle of 25°.

A slight increase or decrease of measurement will soon determine the best setting for your machine.



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16) BEDROOM FURNITURE. 88 pages. 30 bedroom furniture projects. Beds, dressers, vanities, stands, hampers, chests, clocks, lamps—and 10 foot stools and benches. Modern and period design. 250 photos, sketches, and working drawings.

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IN THE Morning Mail . .

[Brief comments about SCHOOL SHOP and the field it serves are invited. Address the Editor, SCHOOL SHOP, Ann Arbor, Michigan.

Dear Sir:

I write to congratulate you and your staff on the very splendid job you have done in your special Teaching Methods Issue for April.

Your own editorial, the different articles on teaching the various subjects, Diamond Dust by the Great Scot, and the report from Washington were of particular interest to me.

For some time I have been convinced that teaching of drawing is perhaps the weakest spot in our industrial-arts program. Dr. Coover's article should help here. We can make use of these splendid articles in our teacher-education program. More power to you for the continued improvement of your magazine which gets better each month.

H. H. London,
Professor of Industrial Education,
University of Missouri, Columbia

Dear Sir:

We get more from your fine magazine than from any other on our list. Thanks a million.

J. Philip Chandler,
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News

HAPPENINGS IN INDUSTRIAL EDUCATION

Program for Printers Announced

THE program for the 26th Annual Conference on Printing Education to be held at Cleveland, Ohio, June 17-19 at the Hotel Statler has been announced by President George Bilsey of the International Graphic Arts Education Association. The theme of the conference will be: "What's Ahead in Graphic Arts Education—Emergency Defense Training and the Long-Range Program?"

Speakers will include James E. Bennet, secretary, National Printing Equipment Association, New York City; L. H. Dennis, former executive secretary of the AVA, Washington, D. C.; M. J. Horsch, president, West Virginia Institute of Technology, Montgomery; John J. Deviny, Public Printer of the United States, Washington, D. C.; and Robert H. Caffee, president, Printing Industry of America and of William G. Johnston Co., Pittsburgh, Pa.

Many panel and demonstration programs will also be held covering new teaching techniques and printing processes.

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Penn State Conference

THE Fourth Annual Conference on Industrial Education will be held on Saturday, October 13, at The Pennsylvania State College, State College, Pa., with most of the sessions dealing with the problem of the 60 percent as dramatized in the famous Prosser Resolution. Two panels will be held on this subject and an address will be given by Dean M. R. Trabue of the School of Education, Pennsylvania State College.

State Associations to Meet

Two state associations are meeting this month. The Colorado Vocational Association will hold its convention June 13 to 15 at Estes Park while the Georgia Vocational Association is convening June 7 to 9 at Macon.

Arkansas Group Meets

THE Arkansas Industrial Arts Association met recently at Little Rock with Prof. H. H. London of the University of Missouri as speaker. An exhibit of projects was held and Gerald Maddux, El Dorado, was elected president. E. W. Packard of State Teachers College, Conway, is vice-president and Jack N. Kraras of Pine Bluff is secretary-treasurer. O. W. Romine of Little Rock is reporter.

Vacuum . . . . *from page 7*

to his one remaining relative, "Brother, we had better get on the ball."

The industrial-arts teacher should not put himself in a defensive position, and certainly he should not project blame on his co-worker in another department who is equally interested in pressing his particular interests into a more favorable position. The attitude must shift from suspicion and blame to cause and effect. The way out of this dilemma is not for the pot to call the kettle black but rather for the industrial-arts teacher to redouble his efforts to meet the needs of the students.

The humble ant may have a lesson for us. "Brother, we had better get on the ball."

AIAA . . . . . *from page 13*

publish a directory of supervisors of industrial arts.

The first president of the council is Merrill A. Hamburg of the Detroit, Mich., schools. Kenneth W. Brown, assistant director of the division of fine and industrial arts, Philadelphia, Pa., schools, is the vice-president and Osborne Johnson, supervisor of industrial arts, Denver, Colo., is secretary-treasurer. Dues were established of $2.50 per year.

The American Industrial Arts Association will hold its 1952 convention at Chicago. New officers were not announced at the New York meeting because of delays in the mail balloting procedure.

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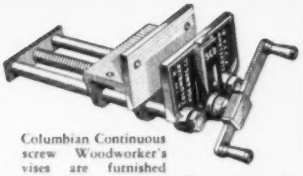

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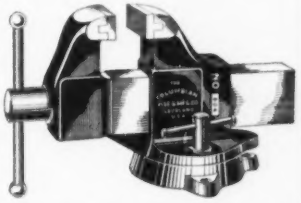

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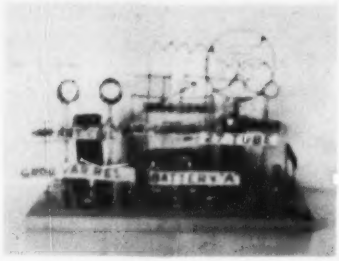
Radio Symbol Device

In the study of radio, symbols are a "*must.*" Students without a good fundamental knowledge of these symbols are completely at a loss as they are not able to follow a circuit or drawing.

The attached photograph shows a model which I built on a breadboard and which has been of great help in vocational radio shop programs for beginners. I think industrial-arts radio teachers will find it beneficial as well.



It is a completely-wired one-tube radio circuit in workable order. Each component has attached to it its symbol. These symbols are made with bare wire bent and soldered in the appropriate shape. The model is actually in two colors: one color representing the R.F. circuit, and the other the A.F. circuit. As the student studies the wired diagram model of the radio he also becomes acquainted with each symbol and learns them by sight.—*Gerald F. Lanks, McKeesport, Pa., Vocational School.*

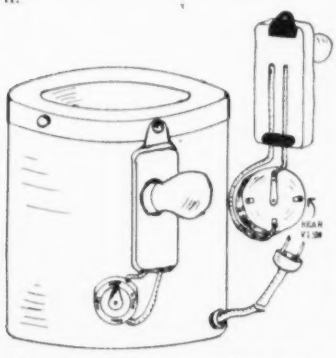
"Giant" Brad Driver

For nailing in cramped or hard-to-reach places, a "Long Tom" driver will hold your 8d nails, start them, keep them "in line," and keep them from bending over while it drives them in.

It consists simply of an 18" length of ⅛" (I.D.) pipe into which is inserted a ¼" diameter steel rod about 19" long with a metal weight driving-block attached to one end. The heads of common nails will have to be slightly ground, while, of course, 8d or larger finishing or casing nails can be used without preparation.—*Stan Schirmacher, Cottonwood, Ariz., High School.*

Glue Pot Warning Light

A glue pot left burning overnight is dangerous, messy to clean up, and causes a persistent stench. To prevent this, I have rigged a warning light on it.



Mount a bakelite receptacle on a piece of 2" x 5" x ¾" wood. Attach a small metal plate to the back of the board, and fasten it to the pot with a pot cover screw. Run the wires from the socket to the glue pot switch, attaching one to the "Off" and one to the "Medium" connection. Light intensity will correspond to switch position. — *Bernard Blond, Park View Elementary School, Washington 10, D. C.*

"Lube" Oil Kink

A little "lube" oil on a cold chisel or rivet set really works wonders in easing the operation.—*Sterling Graham, Dundalk H. S., Baltimore 22, Md.*

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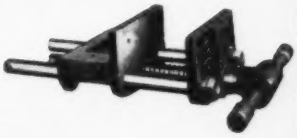

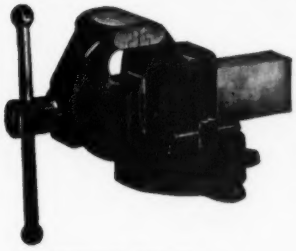

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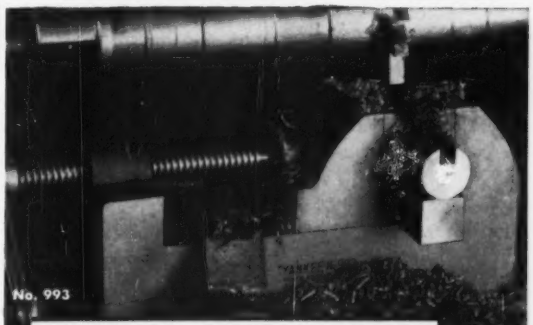

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Diamond Dust

Abrasive comments from that doughty Scot, Tom Diamond, former head, Department of Vocational Education, University of Michigan, Ann Arbor.

The Shop Teacher from the Sidewalk

THE task of the critic is an easy one, and frequently it becomes a pleasant one. As evidence one need only observe the sidewalk engineers who infest the area around the skyscraper being erected on Main Street. They are quite sure the footings are inadequate, they question the mixture of the concrete being poured, and it is their considered opinion that the steel beams being welded will eventually fall apart.

Then there are the expert firefighters who gather around the fringes of every conflagration. They can tell at a glance that the whole strategy of fighting the fire is woefully mismanaged. They wonder quite volubly how the fire chief holds his job and, on occasion, have been known to complain bitterly to the city fathers about his obvious inefficiency.

All of this is good because this is how democracy works. It serves as an outlet through which interested members of the community can voice their opinions, and it hurts no one in particular. The buildings go up just the same, the fires are extinguished with a minimum of loss, and the fire chief continues to serve his community efficiently.

This leads us to ruminate that we have consistently criticized the shop teacher for his sins of omission and commission. We have not hesitated to draw attention to the teacher's weaknesses, and we have twitted him unmercifully because he has failed to do some things as we would like to have them done.

But there are at least two sides to every question. One is the outside where the sidewalk supervisor sees only what is on the surface. The other side is the one occupied by the teacher who has the responsibility, and who is hedged around by conditions which give him little or no choice whatever action he takes.

Recently it dawned on some of these sidewalk observers that perhaps the teacher is doing a better job than they could have done had they been faced with the same conditions. Perhaps the equipment available is inadequate for the size of the class. Someone may have failed to supply enough material, or it may have been delivered too late to be of much use. Limitations in the budget may have made it impossible to secure the tools which we believe should have been used, or the school policies may have made it necessary to do something which was different than what the teacher believed to be best.

Because of these, and other factors which affect the actions of the teacher, it would be well for us to reflect on the words of the poet, Robert Burns, when he said:

> Oh gently scan thy brother man
> Still gentler, sister woman;
> Though they may gang a kennen wrang,
> To step aside is human.
> One point must still be greatly dark,
> The moving *why* they do it. . . .

If we look more deeply into the matter, and if we concern ourselves with the causes behind whatever action is taken, we cannot but be impressed with the fact Mr. Average Teacher is doing much for the young people for whom he is responsible.

We look at the standard of workmanship displayed in the projects being made, and it looks as though it might be improved. But when we think of the immaturity of many of the pupils, and when we remember that some of them may belong in the retarded group, we are likely to conclude that, under the conditions, the standards are reasonable. (*Continued on page 24*)

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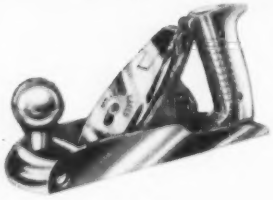

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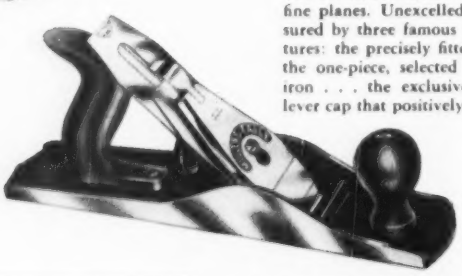

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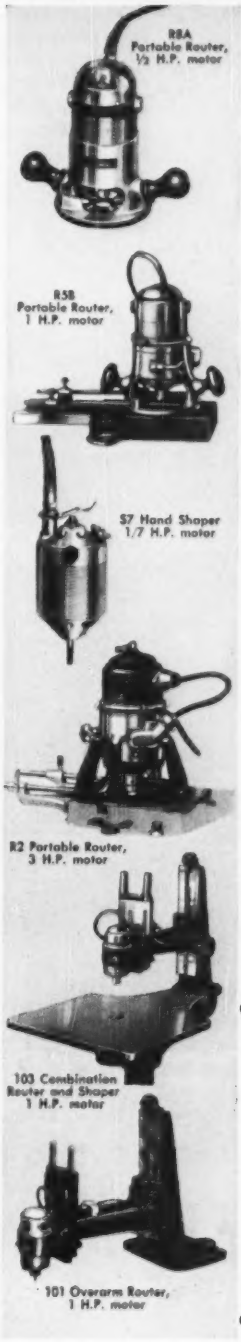

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Lapidary . . . . . *from page* 11

may be left on the face plates and used on the lathe, eliminating an extra arbor or motor. For the convex sander, the face is padded with felt or sponge rubber before covering with abrasive cloth. The stone is now ready for polishing.

Two hard felt wheels should be provided for polishing—one for the first step and one for the final step. Levigated alumina is a very good agent for the first step, and cerium oxide for the final polish. Mix these powders with water to a thick, soupy consistency and apply to the wheels with a small brush such as a 1½" paint brush. After polishing the stone with levigated alumina, wash it clean. Use care not to mix the two polishing agents. After completing the polishing operation, cover the abrasive pans to prevent foreign matter from dropping in. The polishing units should be installed a safe distance from the grinding wheels and sanders. Many stones lack a high polish, making it difficult to determine when a good polishing job has been done. One method is to see if the light rays reflect from fine points (pin point reflection). The stone is removed from the dop stick by heating gently until the wax is soft. Remove the remaining wax with alcohol.

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Dust . . . . . *from page* 22

Then too, the casual observer frequently fails to note that the physical project does not always reflect the full measure of learning that has taken place. He cannot see, and ofttimes neglects to inquire, what the pupils learned while they were manipulating the tools and materials.

Some of us complain about the housekeeping in some school shops, but are we aware that the teacher has too many pupils for the facilities available—he may have six classes each day and coach athletics in his spare time. Moreover, those responsible for the distribution of materials fail to supply what he needs until the need has passed. Some of his equipment may be in need of repair, but he must struggle along with it because of the negligence of someone in authority.

And so it goes. Innumerable factors, over which the teacher has no control, affect the character of the teaching done. Because of this we who observe the classroom from the sidewalk should pause before we criticize. Perhaps some of the discrepancies we observe have appeared as a result of individuals or conditions which should have, but have not, been eliminated by someone other than the teacher.

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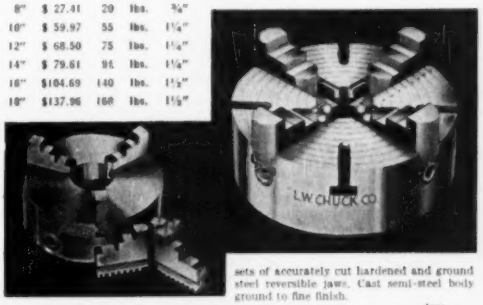

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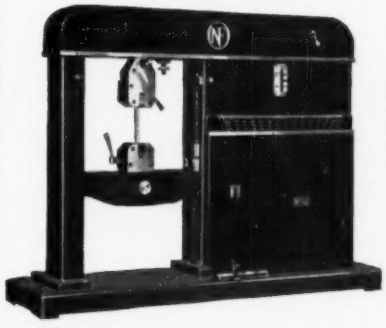

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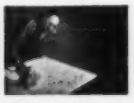

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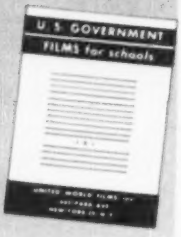

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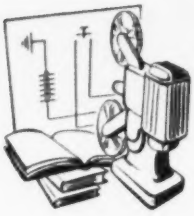

Books:

Cabochon Jewelry Making. A. and L. Sanger. Peoria: Chas. A. Bennett Co., Inc., 1951. Pp. 128. $3.50.

Intended for amateur jewelry makers, this inclusive presentation gives a number of new designs and methods of mounting cabochon jewelry. General instructions begin with the making of the design and progress through making the bezel, soldering, making decorations, pickling, cleaning and polishing, and setting stones. Numerous projects are fully illustrated as are various operations.

Projects in General Metal Work. Ruley. Bloomington, Ind.: McKnight and McKnight Publishing Co., 1951. Pp. 80. $2.00.

This is an excellent collection of relatively simple projects. The drawings are in blueprint form, and are accompanied by a procedure sheet for each project. Teachers of general metal work will welcome this publication as a valuable addition to their reference library.

M. J. Ruley is Director of Industrial Arts in Tulsa, Oklahoma.

General Mathematics for the Shop. Nelson, Moore, Hamburger, and Becker. New York: Houghton Mifflin Co., 1951. Pp. viii + 440. $2.64.

The problems in this book are confined to those that are likely to be encountered in the every-day experience of the mechanic. They have been selected with a view to meeting the needs of workers in metal, in wood, in electricity, and in the building trades. Reviews and tests are provided at frequent intervals to insure that the pupils are learning as they progress. It should serve as a text for trade classes, particularly in situations where the pupils in a class come from a number of different trades.

Philip Becker, who edited the book, is Principal of the William Grady Vocational High School, Brooklyn, N. Y. The other authors are attached to the Cleveland Public School System.

Bricklaying II. Rau et al. Albany: Delmar Publishers, Inc., 1951. Pp. xix-206. Plastic binding, $3.25. Cloth, $4.25.

Covering the intermediate phases of the bricklaying trade, this volume is intended for use in trade preparatory classes, apprentice training, upgrading programs, and self study. The work is presented on a unit basis with related technical information given as well as shop practice. Numerous drawings and photographs aid in the presentation of the material which was prepared in conjunction with the Structural Clay Products Institute as well as the vocational divisions of various state education departments.

F. William Rau is coordinator, masonry trades, Connecticut State Department of Education.

Automotive Engines ($1.60); **Automotive Chassis** ($1.20); **Automotive Tools** ($1.20). Crouse. New York: McGraw-Hill Book Co., Inc., 1951. Paper bound.

These three workbooks are designed to accompany the author's text, *Automotive Mechanics*, second edition. Each workbook is a combination study guide, shop guide, and work-progress report. Shop and laboratory exercises are given, covering each phase of automotive shop work. Numerous illustrations help in the presentation of the material.

William H. Crouse is editor of technical books for McGraw-Hill Book Co. and formerly worked in the automotive industry.

Pamphlets:

Guide for Housing and Layout of School Shops in California is a 40-page booklet which carries in detail the factors to be considered in shop planning. Prepared by a committee of shop teachers in cooperation with the California State Department of Education, the booklet contains a number of suggested floor plans for both vocational and industrial-arts shops. Available for 25c from the Bureau of Trade and Industrial Education, State Department of Education, Sacramento 14, Calif.

A Technique of Angle Cutting for Printers is a pamphlet by Samuel C. Garsten of the Murrell Dobbins Vocational-Technical School, Philadelphia, Pa., which portrays methods of setting of type on an angle. Pictures and drawings show the techniques described. Available for $1.00 directly from the author.

Audio Visuals:

Pride of Workmanship is a 16mm sound film in full color which depicts the story of the Industrial Arts Award program of the Ford Motor Co. through the story of Dick Rice of Peoria, Ill., one of the Outstanding Achievement Award winners in 1950. Also available is a 35mm slide film called *Craftsmanship Unlimited* covering the program. Both may be secured without charge from Industrial Arts Awards, Ford Motor Co., 2919 Schaefer Road, Dearborn, Mich., giving alternate dates for showing.

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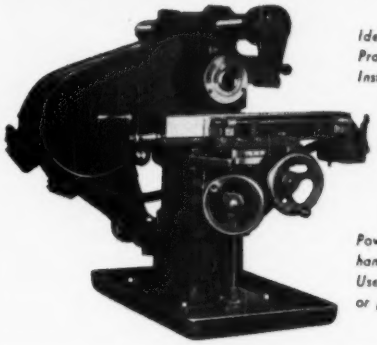

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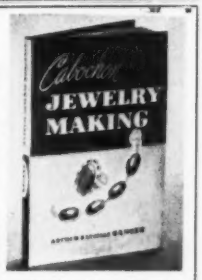

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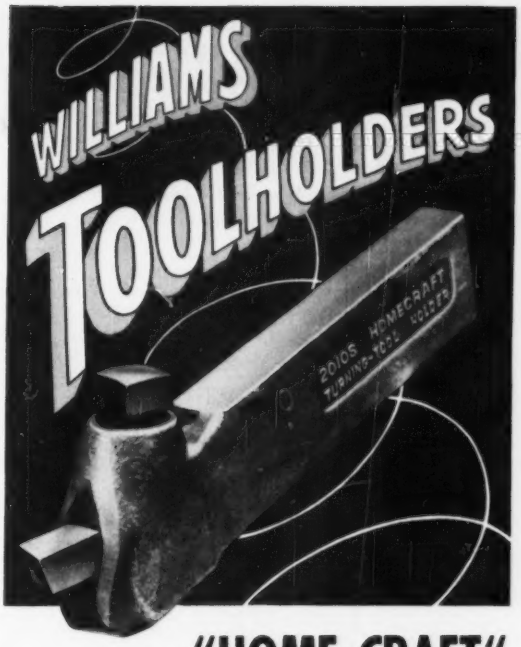

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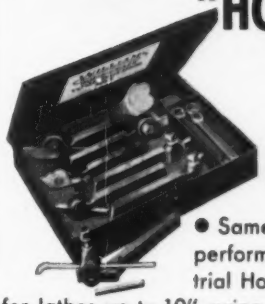

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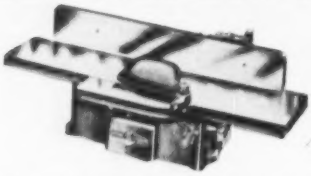

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6-51

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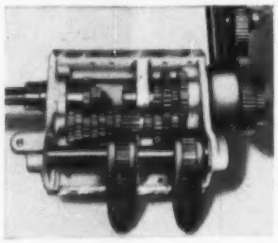

A new and simplified quick-change gear mechanism designed to save time and give long dependable service is now being supplied on the 16" swing and 14½" swing South Bend lathes. The new design requires less power and is more sturdy than other designs. A direct-reading index chart shows positions in which the two conveniently located tumbler levers are placed for each of the 48 screw-thread pitches, 48 power longitudinal feeds, and 48 power cross feeds. Shifting a single lever changes feed instantly.

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For complete details on availability, write R. Caluwaerts Co., Inc., 1 West 67th St., N.Y. 23, N.Y., mentioning SCHOOL SHOP; *or check no. 65 on the coupon.*

New Literature

Sylvania Teaching Aids are listed in a profusely illustrated bulletin: wall charts; notebook-size lesson folders; technical tube manuals; color-code cards; radio symbol charts; television servicing booklets; eight precision instruments for school and college electronics labs. May be obtained free from Advertising Dept. "SS", Sylvania Electric Products, Inc., Emporium, Pa.; *or by checking no. 66 on the coupon.*

Build-A-Tool Plans, a farm shop service, listing designs and materials for many farm tools which can be constructed through welding, are now available in pamphlet form, from Lincoln Electric Co., Cleveland 1, Ohio (mention SCHOOL SHOP); *or by checking no. 67 on the coupon.*

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Washington . . . . . *from page 32*

The sum involved is about $400,000—not as much as had been hoped for, but much better than nothing.

The unexpended balance exists because of funds which have been allocated for specific training programs in areas where such programs are not in effect. For example, the District of Columbia uses only a very small portion of its allotment for agricultural training.

McGarvey to Retire.—George A. McGarvey, program specialist, Trades and Industrial Education Service, Office of Education, will retire about July 1.

Mr. McGarvey has been in charge of the North Atlantic region, and is one of the best known men in the field, having been with the Office of Education for many years. He was honored at the T. & I. North Atlantic Conference recently in New York City.

No announcement of Mr. McGarvey's successor has been made as yet.

Federal Grants.—Grants totaling $46,500,000 have been reserved for 100 school construction projects in "federally-affected" local school areas and on federal property, Education Commissioner Earl J. McGrath has announced.

"Funds currently available," said Commissioner McGrath, "will enable the federal government to meet the most urgent school construction needs in approximately 10 per cent of those localities where federal government activities are responsible for greatly increased population pressures. Thus, the education of thousands of children will be insured in those communities where the federal government has assumed financial responsibility."

McGrath said that 697 school districts had applied for assistance up to March 12, 1951. Of this number, he said, 528 have submitted construction projects calling for $182,000,000 in federal funds. In addition to this, he said, $51,000,000 is needed for construction of schools on federal property, and about $7,000,000 for temporary school construction, making a total need of $240,000,000 at this time.

Education's Battle for TV.—The extent to which television channels will be used for education was still up in the air as this issue of SCHOOL SHOP went to press. This is an important question to all educators, but particularly to teachers of vocational education, since early experiments have shown the medium to be most successful in such training.

The Federal Communications Commission was to have conducted public hearings on its proposed reallocation of additional TV channels, which did not provide for what many believe is fullest use for educational purposes, on May 19.

One chief criticism was the allocation of educational channels to the ultra-high-frequency area, where new equipment for transmission and reception must be developed.

Meanwhile education forces had been gathering for the presentation of their case before the FCC. The National Conference of Mayors, a potent force, had lined up behind greater allocation of limited air space for education. Senator William Benton, of Connecticut, had taken the issue to the floor.

"Here we have a key, a hope," he said, "a chance to get at the basic problem of our times, which is the understanding and education of our fellow citizens."

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Index to Volume X

All articles and projects in Volume X (1950-51) of SCHOOL SHOP may be found in the index, listed alphabetically by both author and subject (e.g., woodworking, machine shop, etc.). Following the name of the author and the title of each article are the month of issue and the page on which the article appears.

A

Adams, Aaron. Jigsaw Jottes, Sept., 18; Oct., 28; Nov., 26; Dec., 19, 24; Feb., 8; Apr., 44; June, 9. Pete and Benny, Oct., 13.

Akeson, Harold O. English Colonial Wall Sconce. Feb., 11.

AMERICAN VOCATIONAL ASSOCIATION—
A House Divided? Sept., 2.
From Washington. Sept., 48.
Miami AVA Convention. Oct., 35.
Miami Plays Host to AVA. Jan., 18.
"Hail" and "Farewell." Jan., 2.

Anderson, Herbert. Add Upholstering to the Program. Dec., 12.

Anderson, M. C., and J. W. Rocke. The Proper Care and Feeding of Spray Guns. Oct., 14.

Andrews, Frank L. Make Mallets from Old Bats. Dec., 28.

Aten, G. Avery. Let Them See the Threads. Sept., 14.

ATOMIC-VISUAL AIDS (See also Instructional Resources)
Crankshaft Mount. M. C. Anderson. Jan., 16.
Cutaway Motor for Auto Shop. Robert J. Fortune. Oct., 12.
Let Them See the Threads. G. Avery Aten. Sept., 14.
Lowly Spud Is New Aid to Teacher. Lawrence G. Lindahl. Sept., 34.
Machinist Scale Kink. Carl F. Sorenson. Sept., 28.
Make a Teaching Aid for Lathe Tool Work. Elvin W. Diehl. Nov., 26.
New Visual Aids in Industrial Education. Apr., 73.
Radio Symbol Device. Gerald F. Lanke. June, 20.
Shop Teachers' Service: Free and Low-Cost Teaching Aids. Oct., 17.
Would You Like to Make Close-up Slides Easily? Albert R. Wallcott. Dec., 11.

AUTO MECHANICS—
Bonding Brake Lining. H. B. Barrett. Dec., 16.
Cold Kink. Tobe Tramontine. Sept., 28.
Cutaway Motor for Auto Shop. Robert J. Fortune. Oct., 12.
Good for Demonstration. M. C. Anderson. Jan., 16.
Learning in the Auto Shop. Ray F. Kunz. Apr., 13.

B

Bardo, L. H., and John I. Shuman. Organize Machine Shop Learning. Apr., 26.

Barich, Dewey F. Stimulating Learning in Metalworking. Apr., 37.

Barnard, David P. Photographic Belongs to Industrial Arts. Oct., 9.

Barrett, H. B. Bonding Brake Lining. Dec., 16.

Barrowman, Russell. Shop-Made Scoreboard Serves School Well. Sept., 13.

Blond, Charles P. Cutting Special Threads. March, 22.

BOOKS (See Instructional Resources)
New Books in Industrial Education. Apr., 77.

Boers, Robert B. A Combination Stool Is a Good Project for Woodworkers. Nov., 14.

Byrne, William P. A Boat-Building Program in the Venice of America. Nov., 12.

C

Carl, Kenneth E. Do They Get Jobs? Nov., 9.

Chatfield, William O. Avoid Accidents: Teach Shop Safety. Oct., 32.

Conert, S. I. Drawing Can Be Made Interesting. Apr., 45.

CRAFTS—
Add Lapidary to Your Program? Marion F. Willis. June, 10.
A Leather Carving Tool. Fred E. Morton. May, 12.
Marbleized Projects Are Realistic "Kosmic." Charles J. Varga. Dec., 18.
Western Washing Well Rope Belt. Stan Schirmacher. Sept., 20.

D

Davis, Henry C. Durham, North Carolina's Special-Education Program. Feb., 7.

Dirman, Aubrey C. Use Shop Classes for "Refresher" in Grammar. Nov., 17.

Decker, Arthur G. Anchor Lamp Project. Oct., 52.

Dimond, Thomas. Teaching for Understanding. Apr., 5.

Dinwoodie, Dyer. Thomas Dimond: Have You Ever Sewn a Coat-a Vest? Feb., 26. Consider the Bug. May, 18. Cadenska! The Traffic. Apr., 14. The FinX. Bat. May, 26. The Shop Teacher from the Sidewalk. June, 23.

Dick, Arthur A. Our Greatest Need: Up-to-Date Teaching. Feb., 9.

Diehl, Elvin W. Make a Teaching Aid for Lathe Tool Work. Nov., 26.

Directory of Federal and State Officials. Apr., 84.

DRAFTING—
Blueprint Correction Kink. Ralph P. Madeley. Feb., 24.
Drawing Can Be Made Interesting. S. I. Conert. Apr., 45.
Drawing Scale Kink. F. N. Newton. Feb., 22.
Drawing Table and Stool Made as One-Piece Unit. George Shalkhauser. Oct., 11.
Eraser Sharpener Kink. Harold O. Akeson. Nov., 16.
Has Illustration a Place in High-School Drafting? Frank C. Smith. Jan., 12.
I Saw THE THING! M. W. Knorr. Feb., 18.
Lettering Guide Lines. Alvin H. Somerwine. May, 18.
Lowly Spud Is New Aid to Teacher. Lawrence G. Lindahl. Sept., 34.
Make Your Templates from Used Triangles. Glenn H. Osborne. Oct., 13.
Scale Kink. Carl F. Sorenson. Sept., 28.
Stop That Smudge. Arthur F. Schuster. Mar., 16.
Strop and Stone Kink. Paul C. Hoopes. Nov., 16.
The Cog—It Turns a Quarter Century. Edgar F. Russell. Jan., 22.

E

ELECTRICITY AND RADIO—
"Bestproof" Power Supply. Joseph Leeb. Mar., 12.
Connection Kink. Samuel D. Levinson. Dec., 26.
Electricity Lab Kink. Samuel D. Levinson. Oct., 34.
Hysteresis in One Easy Lesson. Hugh Linebaugh. Feb., 20.
Plan Meaningful Radio Lessons. A. A. Vezzani. Apr., 41.
Radio Symbol Device. Gerald F. Lanke. June, 20.
Selection of Electricity Projects Is Important in Industrial Arts. T. Glade Wilcox. Dec., 14.
Shop-Made Scoreboard Serves School Well. Russell Barrowman. Sept., 13.
Stress What's New in Electricity. T. Glade Wilcox. Apr., 47.
TV Instruction Should Emphasize Installation. Samuel L. Marshall. Dec., 17.
Everhart, Frank M. Students Like This Grinder Head. Jan., 9.

F

Fales, Roy G. Teaching Methods in the General Shop. Apr., 7.

Faulx, Worsley. Handy Grinder Attachment. June, 14.

FORGE—
Attractive Carving Set. A. R. Hegman and Stanley A. Glow. Mar., 10.
Forge Practice Should Be Taught. Arthur H. Luehring. May, 10.

Fortune, Robert J. Cutaway Motor for Auto Shop. Oct., 12.

Foss, Catharine R. A Word to the Wives. May, 13.

Frankson, Carl E. Finding and Selecting Potential Industrial-Arts Teachers. Feb., 14.

From Washington. Sept., 48; Oct., 56; Nov., 46; Dec., 40; Jan., 32; Feb., 44; Mar., 32; Apr., 96; May, 32; June, 32.

G

GENERAL SHOP—
Durham, North Carolina's Special-Education Program. Henry C. Davis. Feb., 7.
Laboratory School Program: From junior kindergarten to junior high. Lester C. Smith. Dec., 9.
Shop Organization Made Easy. Arthur J. Halloran. Dec., 33.
Southpaws in Your Shops. E. R. Oetting and Thomas G. King. May, 7.
Teaching Methods in the General Shop. Roy G. Fales. Apr., 7.
The Proper Care and Feeding of Spray Guns. J. W. Rocke and M. C. Anderson. Oct., 14.
Use Shop Classes for "Refresher" in Grammar. Aubrey C. Dirman. Nov., 17.
Why the Composite General Shop? H. H. London and Merton C. Wheeler. Feb., 12.

Gibson, F. Rodney. "Ducky" Bottle Opener. Mar., 8.

Glow, Stanley A., and A. R. Hegman. Attractive Carving Set. Mar., 10.

Griffin, Denham B. A Pipe Rack for Beginner Classes. Oct., 28.

H

Hall, Clyde W. A Six-Hour Machine Woodworking Project. Mar., 9.

Halloran, Arthur J. Shop Organization Made Easy. Dec., 33.

Halpern, George M. Single Cut Prints Color through Use of "Frisket." Jan., 10.

Harding, George C. Graphic Arts Tip: Know Your Spaces and Quads. Sept., 18.

Hegman, A. R., and Stanley A. Glow. Attractive Carving Set. Mar., 10.

Helbeau, Maurice. Tag: Eye for Safety in Metal-Arts Shop. Nov., 14.

Henderson, R. R. The Silk Screen Process in the School Shop. June, 12.

Hollond, Raymond. Students Choose This Aluminum Serving Tray. Feb., 8.

Hoopes, Paul C. Want Orders Filled? Learn Wood Terms. Sept., 16.

I

INDUSTRIAL ARTS—
AAIA Convention Note. News. Sept., 22.
ACIATE Chooses Officers. Nov., 18.
A House Divided? Editorial. Sept., 2.
A Word to the Wives. Catharine R. Foss. May, 13.
Democratic Beginnings. Editorial. Feb., 2.
Fill the Vacuum! Jess E. Rathbun. June, 7.
Finding and Selecting Potential Industrial-Arts Teachers. Carl E. Frankson. Feb., 14.
IA Award Winners Honored. Nov., 18.
IAPPC Gains Status as Planning Body. Sept., 26.
Industrial Arts Award Winners Announced. Sept., 42.
Laboratory School Program: From junior kindergarten to junior high. Lester C. Smith. Dec., 9.
Our Greatest Need: Up-to-Date Teaching. Arthur A. Dick. Feb., 9.
The Production Line in Industrial Arts. Conrad Johnson. June, 8.
Show Your Program to the Public. Armand G. Rehn. Oct., 46.
Supervision Can Be Democratic. H. M. Jellison. Mar., 7.
This I Do Believe. Auburn L. Lamb. Jan., 7.
Why the Composite General Shop? H. H. London and Merton C. Wheeler. Feb., 12.

INSTRUCTIONAL RESOURCES. Sept., 36; Oct., 48; Nov., 31; Dec., 33; Jan., 24; Feb., 36; Mar., 24; Apr., 77; May, 24; June, 26.

In the Morning Mail. Sept., 30; Dec., 22; Apr., 58.

J

Jellison, H. M. Supervision Can Be Democratic. Mar., 7.

Johnsen, Martin O. Three-Exercise Welding Project. Nov., 10.

Johnson, Conrad. The Production Line in Industrial Arts. June, 8.

Johnstone, William G. Tool for Turning Archery Shafts. Feb., 10.

K

Karch, R. Randolph. Modernize Your Graphic-Arts Course! Apr., 53.

King, Thomas G., and E. R. Oetting. Southpaws in Your Shops. May, 7.

KINKS—
Aids in Gluing. William Etsweiler, Jr. Jan., 16.
Aluminum Etching Solution. J. C. McClung. Feb., 24.
Anti-Curl Kink. (Charts). H. A. Link. Sept., 28.
Avoid Mixed Type Spaces. Louis Heller. May, 18.
Blade Adjustment Kink. M. M. Pittman. Feb., 22.
Bandsaw Kinks. C. W. Cecil. Feb., 24.
Blueprint Correction Kink. Ralph P. Madeley. Feb., 24.
Cleaning Kink. E. M. Woods. Feb., 22.
Coil Kink. (Auto Shop Light Cord). Tobe Tramontine. Sept., 28.
Connection Kink. (Electricity). Samuel D. Levinson. Dec., 26.
Display Kink (Instruction sheets). Eugene L. Dyke. Dec., 26.
Drawing-Scale Kink. F. N. Newton. Feb., 22.
Dust Collection Kink. (Grinder). Ira H. Johnson. Dec., 26.
Electricity Lab Kink. Samuel D. Levinson. Oct., 34.
Eraser Sharpener Kink. Harold O. Akeson. Nov., 16.
"Grant" Brad Driver. Stan Schirmacher. June, 20.
Glue Pot Kink. A. C. Oscilio. Feb., 24.
Glue Pot Warning Light. Bernard Blond. June, 20.
Good for Demonstration (Engine Principles). M. C. Anderson. Jan., 16.
Hands Wood Rule. Dean Kittle. May, 18.
Housekeeping Kink. Harold S. Beal. Feb., 22.
Jointing Kink. Charles Reich. Feb., 24.
Keeping Tabs Kink (Blackboard Mirror). Harry J. Miller. Oct., 34.
Kink from the Girls (Counting Paper Sheets). Paul C. Hoopes. Sept., 28.
Lettering Guide Lines. Alvin H. Somerwine. May, 18.
Picture Frame Assembly Technique. Wallace L. Victoria. Mar., 16.
Protection Kink. (Whetstone). Harry J. Miller. Dec., 26.
Radio Symbol Device. Gerald F. Links. June, 20.
Reamer for Bore Finishing. C. P. Fisher, Jr. May, 18.
Safe for Pickling (Copper and Brass). Herbert Cleaveland. Jan., 16.
Saves in Purchasing. Cowan S. Snyder. Jan., 16.
Saw Cleaning Kink. David F. Groves. Feb., 24.
Scale Kink. (Machinist). Carl F. Sorenson. Sept., 28.
Shield Kink. (Metalworking). William J. Brown. Nov., 18.
Shop Class Chairs. M. C. Anderson. Mar., 16.
Stop That Smudge. Arthur F. Schuster. Mar., 16.
Strop and Stone Kink. Paul C. Hoopes. Nov., 16.
Those Blankety Bar Clamps. Paul C. Hoopes. May, 18.
Tub Kink (General Metals). Walter Conacher. Oct., 34.

Klotz, Edward J. Oregon Myrtle. Oct., 16.

Knorr, M. W. I Saw THE THING! Feb., 18.

Kunz, Ray F. Learning in the Auto Shop. Apr., 13.

L

Lamb, Auburn J. This I Do Believe. Jan., 7.

Lappin, Alvin R. Modern-Table Project Uses Basic Operations. Jan., 6.

Leeh, Joseph. "Buyproof" Power Supply. Mar., 15.
Lewis, D. W. Cooperative Design Leads to Attractive Coffee Table Project. Feb., 16.
Lidstone, James B. Parents Like This Knife Rack. Feb., 13.
Lightle, R. Paul. This Cabinet Stresses Space and Good Lines. Sept., 12.
Lindahl, Lawrence G. Lowly Spud Is New Aid to Teacher. Sept., 34.
Linebaek, Hugh. Hysteresis in One Easy Lesson. Feb., 20.
Luehring, Arthur H. Forge Practice Should Be Taught. May, 10.
London, H. H., and Merton C. Wheeler. Why the Composite General Shop? Feb., 12.

M

Machine Shop—
Candle Holders from Steel. Henry J. Seymour. May, 9.
Cutting Special Threads. Charles P. Bond. Mar., 22.
Dust Collection Kink. Ira H. Johnson. Dec., 26.
Let Them See the Threads. G. Avery Aten. Sept., 14.
Organize Machine-Shop Learning. John T. Shuman and L. H. Bardo. Apr., 26.
Reamer for Bore-Finishing. C. P. Fisher, Jr. May, 18.
Students Like This Grinder Head. Jan., 9.
Tool for Turning Archery Shafts. William G. Johnstone. Feb., 10.
Try This Rotary Lawn Mower. D. C. Marshall. Mar., 11.
Marlow, H. LeRoy. Type-Size "Spotter." Feb., 34.
Marshall, D. C. New-Type Inlaid Checker Board. Dec., 15.
———. Try This Rotary Lawn Mower. Mar., 11.
Marshall, Samuel L. TV Instruction Should Emphasize Installation. Dec., 17.
Martin, Pier E. A Leather Carving Tool. May, 12.
McLoughlin, E., and E. O'Gara. Women in the Woodshop! Nov., 23.
Metalwork—
Aluminum Etching Solution. J. C. McClung. Feb., 24.
Anchor Lamp Project. Arthur G. Decker. Oct., 52.
Attractive Carving Set. A. R. Hegman and Stanley A. Glow. Mar., 10.
Cleaning Kink. E. M. Woods. Feb., 22.
"Ducky" Bottle Opener. F. Rodney Gibson. Mar., 8.
English Colonial Wall Sconce. Harold O. Akeson. Feb., 11.
Forge Practice Should Be Taught. Arthur H. Luehring. May, 10.
Handy Grinder Attachment. Worsley Fardy. June, 14.
Protection Kink. Harry J. Miller. Dec., 26.
Safe for Pickling. Herbert Cleaveland. Jan., 16.
Shield Kink. William J. Brown. Nov., 16.
Stimulating Learning in Metalworking. Dewey F. Barich. Apr., 37.
Students Choose This Aluminum Serving Tray. Raymond Hoffland. Feb., 8.
Tag 'Em for Safety in Metal-Arts Shop. Maurice Helman. Nov., 14.
Try This Rotary Lawn Mower. D. C. Marshall. Mar., 11.
Tub Kink. Walter Conacher. Oct., 34.
Watch Skill Improve with Nest of Tables. N. H. Poole. Sept., 11.

N

News. Sept., 22; Oct., 36; Nov., 18; Dec., 20. Jan., 20; Feb., 32; Mar., 20; Apr., 95; May, 22; June, 18.
News from Industry. Sept., 44; Nov., 36; Dec., 36; Jan., 28; Feb., 40; Mar., 28; May, 28; June, 28.
New Books in Industrial Eduction. Apr., 77.

O

Oetting, E. R., and Thomas G. King. Southpaws in Your Shops. May, 7.
O'Gara, E., and E. McLoughlin. Women in the Woodshop! Nov., 23.
Osborne, Glenn H. Make Your Templates from Used Triangles. Oct., 13.

P

Pamphlets (See Instructional Resources)
Photography—
Photography Belongs to Industrial Arts. David P. Barnard. Oct., 9.
Would You Like to Make Close-up Slides Easily? Albert R. Walcott. Dec., 11.
Poole, N. H. Watch Skill Improve with Nest of Tables. Sept., 11.
Printing—
Avoid Mixed Type Spaces. Louis Heller. May, 18.
Graphic Arts Tip: Know Your Spaces and Quads. George C. Harding. Sept., 18.
Modernize Your Graphic-Arts Course! R. Randolph Karch. Apr., 33.
Single Cut Prints Color through Use of "Frisket." George M. Halpern. Jan., 10.
Teach Machine Typesetting in High-School Shops? Otto Reising. Dec., 30.
The Silk-Screen Process in the School Shop. R. R. Henderson. June, 1.
Type-Size Spotter. H. LeRoy Marlow. Feb., 34.

R

Rathbun, Jess E. Fill the Vacuum! June, 7.
Rehn, Armand G. Show Your Program to the Public. Oct., 46.
Reising, Otto. Teach Machine Typesetting in High-School Shops? Dec., 30.
Rocke, J. W., and M. C. Anderson. The Proper Care and Feeding of Spray Guns. Oct., 14.
Rodriguez, D. H. Dutch Vocational Education. Sept., 9.
Russell, Edgar F. The Cog—It Turns a Quarter Century. Jan., 22.

S

Safety—
Avoid Accidents—Teach Shop Safety. William D. Chatfield. Oct., 32.
In the Morning Mail. Wayne P. Hughes. Dec., 22.
Safe for Pickling. Herbert Cleaveland. Jan., 16.
Safety Meeting. (News). Oct., 36.
Tag 'Em for Safety in Metal-Arts Shop. Maurice Helman. Nov., 14.
Schirmacher, Stan. Western Wishing-Well Rope Belt. Sept., 20.
School Shop Talk—
A Holiday on Objectives! Oct., 2.
A House Divided? Sept., 2.
Black or White? Mar., 2.
Correlation—but No Absorption! Mar., 2.
Democratic Beginnings. Feb., 2.
Do You Actually Know? May, 2.
Hail—and Farewell. Jan., 2.
Labor "Trouble" and the Shop Teacher. Dec., 2.
Next to Godliness. Dec., 2.
Point Four and Industrial Education. Nov., 2.
School Shops on the Alert. Sept., 2.
The Heritage of the Past. June, 2.
What About Next Summer? Feb., 2.
What Is Good Teaching? Apr., 2.
Why Wait for Washington? Jan., 2.
Senkewitz, Edward G. A Very Little About Threaded Fasteners. Feb., 30.
Seymour, Henry J. Candle Holders from Steel. May, 9.
Shalkhauser, George. Drawing Table and Stool Made as One-Piece Unit. Oct., 11.
Sherinyan, William K. Hardwood Coffee Table. May, 8.
Shop Teachers' Service. Oct., 17.
Shuman, John T., and L. H. Bardo. Organize Machine-Shop Learning. Apr., 26.
Smith, Frank C. Has Illustration a Place in High-School Drafting? Jan., 12.
Smith, Lester C. Laboratory School Program: from junior kindergarten to junior high. Dec., 9.
Sotzin, Heber A. Make Woodworking Challenging. Apr., 17.
Strictly Personal. Sept., 30; Oct., 26; Nov., 20; Dec., 24; Feb., 28; Mar., 14; June, 24.
Suppliers' Directory. Apr., 62.

V

Varga, Charles J. Mathelized Projects Are Really "Keene." Dec., 14.
Vezzani, A. A. Plan Meaningful Radio Lessons. Apr., 41.
Visual Aids (See Audio-Visual Aids)
Vocational Education—(see also Teaching Industrial Arts)
Bonding Brake Lining. H. B. Barrett. Dec., 16.
Dutch Vocational Education. D. H. Rodriguez. Sept., 9.
Forge Practice Should Be Taught. Arthur H. Luehring. May, 10.
Has Illustration a Place in High-School Drafting? Frank C. Smith. Jan., 12.
Point Four and Industrial Education. Nov., 2.
Teach Machine Typesetting in High-School Shops? Otto Reising. Dec., 30.
The Production Line in Industrial Arts. Conrad Johnson. June, 6.
TV Instruction Should Emphasize Installation. Samuel L. Marshall. Dec., 17.

W

Walcott, Albert R. Would You Like to Make Close-up Slides Easily? Dec., 11.
Washington. From (See From Washington)
Welding—
Three-Exercise Welding Project. Martin O. Johnsen. Nov., 19.
Wheeler, Merton C., and H. H. London. Why the Composite General Shop? Feb., 12.
Wilcox, T. Glade. Selection of Electricity Projects Is Important in Industrial Arts. Dec., 18.
———. Stress What's New in Electricity. Apr., 47.
Willis, Marvin J. Add Lapidary to Your Program! June, 10.
Woodwork—
A Boat-Building Program in the Venice of America. William P. Byrne. Nov., 12.
A Combination Stool Is a Good Project for Woodworkers. Robert B. Beyer. Nov., 11.
Add Upholstering to the Program. Herbert Anderson. Dec., 12.
Aids in Gluing. William Etsweiler, Jr. Jan., 16.
A Leather Carving Tool. Pier E. Martin. May, 12.
A Pipe Rack Project for Beginner Class. Denham R. Griffin. Oct., 23.
A Six-Hour Machine Woodworking Project. Clyde W. Hall. May, 9.
Bandsaw Kinks. C. W. Cecil. Feb., 24.
Blade Adjustment Kink. M. M. Pittman. Feb., 23.
Cooperative Design Leads to Attractive Coffee Table Project. D. W. Lewis. Feb., 16.
Drawing Table and Stool Made as One-Piece Unit. George Shalkhauser. Oct., 11.
"Giant" Brad Driver. Stan Schirmacher. June, 20.
Glue Pot Kink. A. C. Orsillo. Feb., 14.
Glue Pot Warming Light. Bernard Blond. June, 20.
Handy Grinder Attachment. Worsley Fardy. June, 14.
Handy Wood Rule. Dean Kittle. May, 18.
Hardwood Coffee Table. William K. Sherinyan. May, 8.
Jointing Kink. Charles Reich. Feb., 24.
Make Mallets from Old Bats. Frank L. Andrews. Dec., 28.
Make Woodworking Challenging. Heber A. Sotzin. Apr., 17.
Modern Table Project Uses Basic Operations. Alvin R. Lappin. Jan., 8.
New-Type Inlaid Checker Board. D. C. Marshall. Dec., 15.
Oregon Myrtle. Edward J. Klote. Oct., 16.
Parents Like This Knife Rack. James B. Lidstone. Feb., 13.
Picture Frame Assembly Technique. Wallace I. Victoria. Mar., 16.
Saw-Cleaning Kink. David F. Groves. Feb., 24.
Shop-Made Scoreboard Serves School Well. Sept., 13.
The Production Line in Industrial Arts. Conrad Johnson. June, 6.
This Cabinet Stresses Space and Good Lines. R. Paul Lightle. Sept., 12.
Those Blankety Bar Clamps. Paul C. Hoopes. May, 18.
Want Orders Filled? Learn Wood Terms. Paul C. Hoopes. Sept., 16.
Women in the Woodshop! E. O'Gara and E. McLoughlin. Nov., 23.

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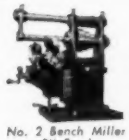

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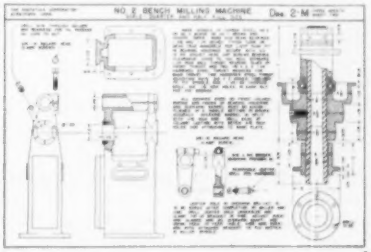

Sample of drawings. Note helpful instructions.

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SCHOOL SHOP
WASHINGTON BUREAU

New Allocation Basis.—Vocational-education funds voted by Congress for fiscal 1952 will be apportioned in a different manner and in different amounts from previous years.

The new funds will be allocated on the basis of the new census, which has shown considerable shifts in population. Under the formula, of course, states which have lost in population will lose proportionately in funds, while those which have gained in population will gain in allotments.

At this writing, the Census Bureau had not furnished the Office of Education with all the basic data necessary to figure the new allotments. However, the calculations will be a simple mathematical process and should be announced soon after all the necessary material is obtained from the Census Bureau.

New Funds Effective July 1.—New funds appropriated by Congress for vocational education will be available July 1, the beginning of the new federal fiscal year. However, while Congress was still wrangling as this issue went to press over how much would be granted for what purposes, officials feel that they will have plenty of time to work out all the problems which might be involved in the new appropriation, due to the fact that most training centers will be closed during the summer months.

They are hopeful of being able to inform all people concerned exactly where they stand before the beginning of the new school year. The appropriation being considered, of course, is the regular annual appropriation, which could be supplemented by a special appropriation if an increase in emergency training became necessary.

George-Barden.—The battle to save the George-Barden Act from financial anemia appears to be won, although as this was written no action had yet been taken in the Senate on appropriations for the program.

However, SCHOOL SHOP is assured that the Senate will go along with the House and keep all money for vocational training in George-Barden channels and not set aside a lump sum for "defense training" as was requested by the Bureau of the Budget.

Whether the Senate will restore the full amount so that the distributive-education program can be aided by federal funds remained problematical. Its chances, at best, were about 50-50.

When the issue was before the House of Representatives, a number of members voiced opposition to deletion of federal aid to the distributive-education program, but it is significant that none took the issue to a vote. Should the Senate restore these funds, amounting to $1,794,000-plus, the House conferees will be under considerable pressure from many colleagues to accept the Senate view.

Principal reason for cutting the distributive-education funds from the program was to appease the economy bloc and because little case could be made for the program as a defense necessity. Action by the committee was unanimous on this score.

"The Bureau of the Budget this year recommended that $10,000,000 be cut out of the $19,842,760 normally appropriated for that particular fund (George-Barden)," said Representative John Fogarty, chairman of the appropriations subcommittee handling Federal Security Agency funds.

"They wanted that $10,000,000 set aside for defense training, which would cut into the agricultural and home-economics and mechanical-arts and distributive-education part of these funds. The committee did not go along with the request of the Bureau of the Budget. We overrode the Bureau and kept the George-Barden Act intact. But our attention was called to the details of the distributive program. The committee was unanimous in cutting the distributive program after looking at the occupation classes being taught, such as training gas-station attendants and soda-fountain people and so forth.

"Well, when we go into those things we thought in times like these we should retrench a little bit. We felt, all things considered, that nobody would be hurt if we cut out this $1,794,000-plus."

It was significant that many Congressmen from Georgia took the lead in opposing the cut in George-Barden funds. M. D. Mobley, AVA's new Executive Secretary, is from Georgia.

Education Office Hit.—If the Senate persists in the House decision to eliminate funds for distributive education, a section of the Vocational Education Division, Office of Education, will be drastically affected. The section is composed of seven persons, four professional and three clerical, which have been concerned with administering the program.

Concern is felt that since the work of the professional staff is so specialized the possibility of keeping them in the Office of Education is slight and that their expert services might be lost to the government should Congress decide to reinstitute the program in future years.

It is estimated that if the funds are cut off, about one-half to two-thirds of the centers in the country devoted to this type of work will be closed.

Emergency Training Plan.—A new plan is under consideration to provide the Office of Education with funds for emergency training. Under the plan, which stands a good chance of being proposed, the Office would be permitted to use unexpended balances for this purpose. (*Continued on page* 29)

INDEX TO
ADVERTISERS

American Handicrafts Co. 29
American Technical Society 2
American Type Founders 4
Atlas Press Co. ..... cover 4
Chas. A. Bennett Co., Inc. 27
Boice-Crane Co. 28
Brodhead-Garrett Co. 6
Burke Machine Tool Co. 27
Buss Machine Works 5
Chicago Wheel & Mfg. Co. 28
Cincinnati Tool Co. 19
Columbian Vise & Mfg. Co. 19
Craftsman Wood Service Co. 23
Delta Power Tool Div., Rockwell Mfg. Co. 17
Donjer Products Co. 29
Gearon Co. 29
Gyro Lamp & Shade Corp. 29
Lufkin Rule Co. 14
L-W Chuck Co. 25
Metal Crafts Supply Co. 28
Millers Falls Co. 22
Morgan Vise Co. 21
National Forge & Ordnance Co. 25
North Bros. Mfg. Co. 21
Oliver Machinery Co. 23
Parks Woodworking Machine Co. 21
Plastic Products Co. 29
Plastic Supply Co. 29
Fayette R. Plumb, Inc. 16
Pootatuck Corp. 31
Popular Homecraft 16
Porter-Cable Machine Co. 25
Frederick Post Co. ..... cover 3
P. T. I., Inc. 5
John F. Rider Publisher, Inc. 19
Russo Handicraft Supplies 29
Howard W. Sams & Co., Inc. 27
E. H. Sheldon & Co. 20
Sheldon Machine Co., Inc. 24
Shopsmith 3
Stanley Electric Tools 23
Stanley Tools 15
The L. S. Starrett Co. 18
State Finance Co. 29
United World Films 26
Universal Scientific Co. 28
Walker-Turner ..... cover 2
Weston Electrical Instrument Co. 15
J. H. Williams Co. 27

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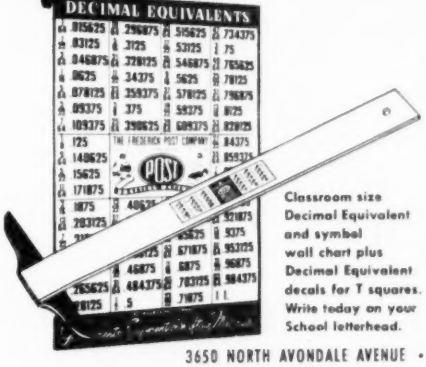

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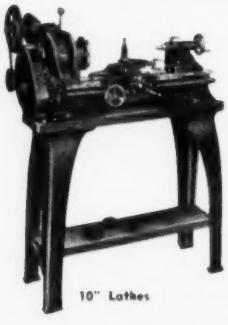

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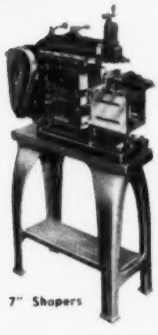

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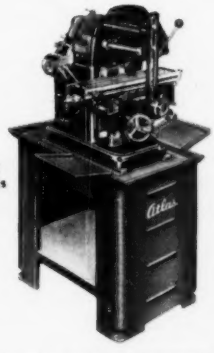

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